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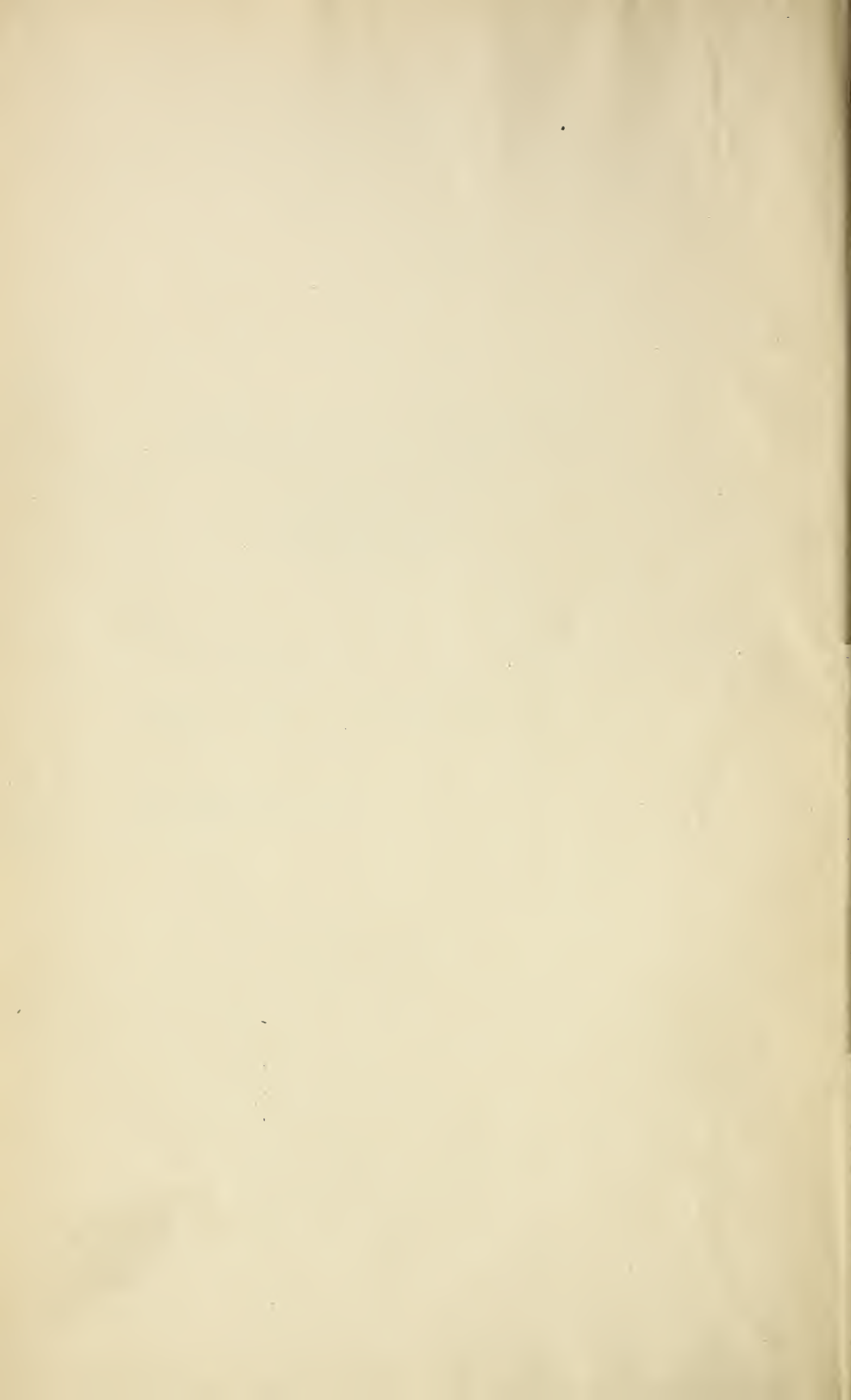
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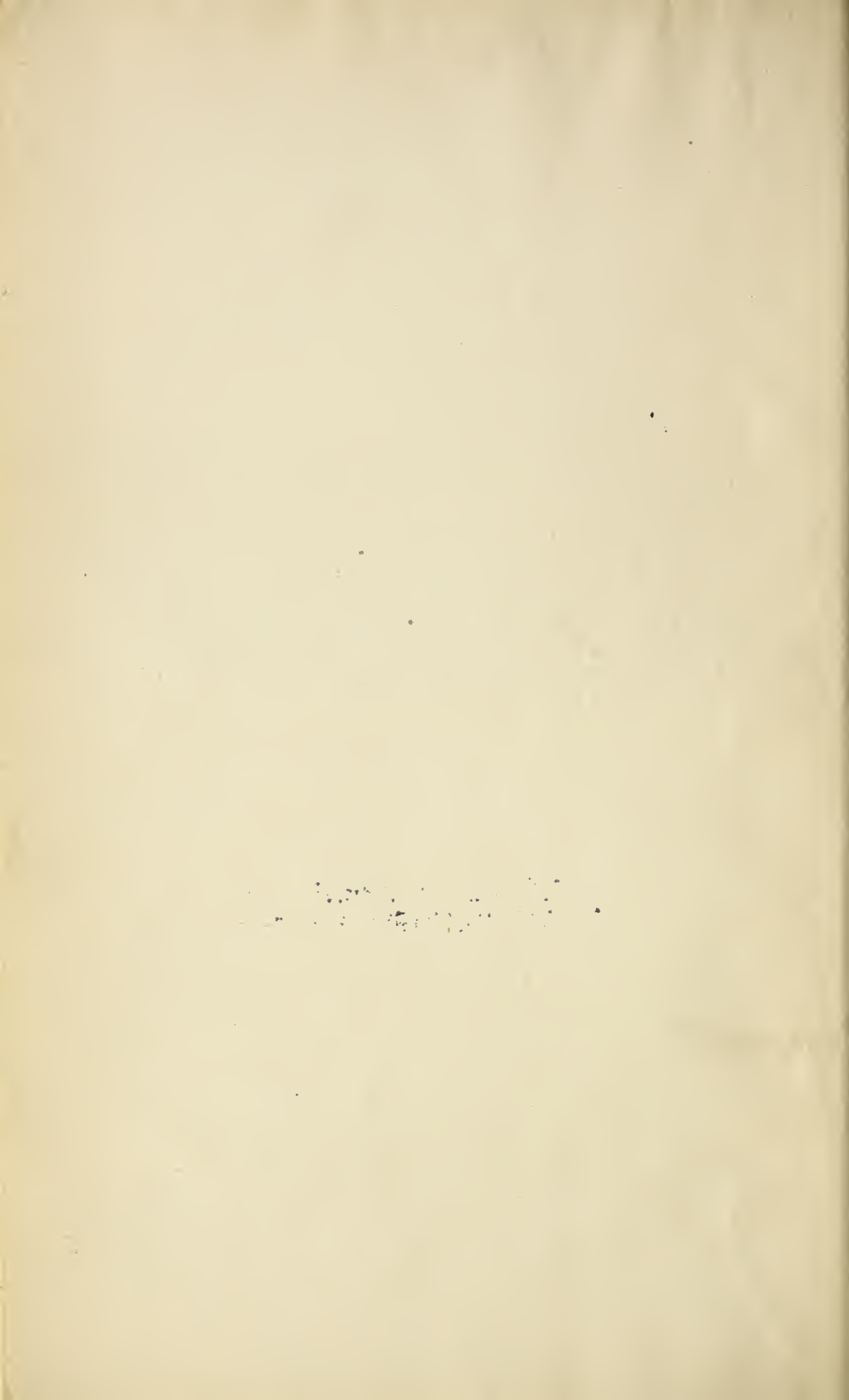
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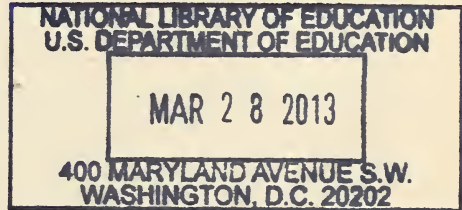


# REPORT

OF THE

# COMMISSIONER OF EDUCATION

FOR



THE YEAR 1892-93.

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VOLUME 1.

CONTAINING PARTS I AND II.

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WASHINGTON:  
GOVERNMENT PRINTING OFFICE,

1895



THE UNITED STATES  
BUREAU OF EDUCATION.

*Created as a Department March 2, 1867.*

*Made an Office of the Interior Department July 1, 1869.*

COMMISSIONERS.

HENRY BARNARD, LL. D.,

*March 14, 1867, to March 15, 1870.*

JOHN EATON, Ph. D., LL. D.,

*March 16, 1870, to August 5, 1886.*

NATHANIEL H. R. DAWSON, LL. D.,

*August 6, 1886, to September 3, 1889.*

WILLIAM T. HARRIS, Ph. D., LL. D.,

*September 12, 1889, to date.*

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# REPORT OF THE COMMISSIONER OF EDUCATION.

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DEPARTMENT OF THE INTERIOR,  
BUREAU OF EDUCATION,  
*Washington, D. C., November 30, 1894.*

SIR: I have the honor to submit herewith my fifth annual report, the same being for the year ending June 30, 1893.

This report begins with a chapter of statistical summaries, a few items of which I quote:

## GENERAL SUMMARY OF PUPILS.

The whole number of pupils enrolled in the schools and colleges of the United States, both public and private, during the school year 1892-93, as given in Chapter I, was 15,083,630, or 22.5 of the population. The increase over the preceding year was 370,697.

This summary does not include, however, large numbers of pupils in attendance upon various special, but less formal, educational agencies, such as evening schools, conservatories of music, schools of art and elocution, business colleges, trade schools, etc. These if included would swell the total to about 15,400,000 persons who attended a school of some kind during a longer or shorter period of the school year.

The great majority of pupils, 96.2 per cent of the whole, were in the elementary grades, receiving instruction such as is given in primary and grammar schools, which usually embrace the first eight grades in a fully graded system. Only 410,420, or 2.7 per cent of the whole, were under secondary instruction in public high schools, private academies, preparatory schools, and corresponding institutions, doing work covering the third four years of a graded course of study. All beyond this is embraced under the general term of higher instruction, under which were 154,989 students, or 1.1 per cent of the total number.

Only 1 pupil in 37 was of the secondary grade, and 1 in 94 under higher instruction.

## THE COMMON SCHOOLS.

The statistics of the different State common school systems, compiled from information furnished by the State school superintendents, are given in detail, pp. 23-38. The common schools are understood in this report to include all elementary and secondary public day schools.



The whole number of pupils enrolled in the common schools during the school year was 13,510,719. Of these, there was an average of 8,855,717 in attendance daily.

The enrollment increased 1.92 per cent over the preceding year, while the average attendance increased 3.45 per cent.

The fact that the average attendance increased at a greater rate than the enrollment indicates a somewhat increased regularity of attendance. An average of  $65\frac{1}{2}$  per cent of all the pupils enrolled during the school year were present each day, as compared with  $64\frac{1}{2}$  per cent the preceding year, and  $62\frac{3}{4}$  per cent in 1879-80. Of the 136.7 days during which the schools were in session in 1892-93, each pupil enrolled attended on an average only 89.6 days. These facts indicate the great extent to which children in the United States leave school during the year to engage in labor or from other motives, particularly in large commercial and manufacturing centers and in rural districts, and emphasize a distinguishing feature of our schools as compared with those of Germany or France; in these countries all children of a prescribed age are required to attend school the entire school term, and official statistics would seem to show that the requirement is enforced.

*The school term.*—The schools were kept on an average 136.7 days, being about the same as the preceding year, and an increase of 6.4 days since 1880.

This period is equal to twenty-seven weeks of five school days each, or a little more than half the number of such weeks in a year, the maximum number of weeks desirable in the school year being forty, with an aggregate of two hundred days.

There were considerable variations in the different parts of the country from the average school term, both now and in 1880, as the following table will show:

*Length of school term in days.*

	1879-80.	1892-93.
North Atlantic Division.....	159.2	169.7
South Atlantic Division.....	92.4	105.7
South Central Division.....	79.2	93.1
North Central Division.....	139.8	146.4
Western Division.....	129.2	141.1

*Teachers.*—There were employed in the schools 383,010 teachers, of whom 122,056 were men and 260,954 were women.

The increase in the number of male teachers was 483, about one-half of 1 per cent; in that of female teachers it was 8,301, or more than 3 per cent. The percentage of male teachers accordingly decreased from 32.5 to 31.9.

There are fewer male teachers now than in 1880, while the female teachers have increased about 70 per cent in number since that date.

*School property.*—The number of schoolhouses in 1893 was 235,426, valued, with their grounds, libraries, and apparatus, at \$398,435,039.



The increase in value was over \$15,000,000, or about 4 per cent, showing that the liberal expenditure for school buildings of the past decade continues uninterrupted. The value of public school property has in fact doubled in the last twenty years. The average value of school buildings has risen during the past year from \$1,679 to \$1,692.

*Finances.*—Of the \$165,000,000 of school revenue received in 1892–93, \$34,000,000 were derived from State taxes and \$108,000,000 from local taxes; the income of permanent school funds furnished \$9,000,000 more, and the balance, \$14,000,000, came from various miscellaneous sources.

State taxation furnished \$3,750,000 more than in 1891–92, an increase of about 12½ per cent, or one-eighth. Three millions of this increase are credited to Pennsylvania. Local taxation increased \$2,750,000, or less than 3 per cent. The total increase was nearly \$8,000,000, or an amount nearly equal to the income from permanent school funds.

Of the total common school revenue, one-fifth comes from State taxes and two-thirds from local taxes. The income from permanent school funds amounts to only about one-twentieth of the total school revenues.

The total expenditure for school purposes was \$163,000,000. Of this sum, \$104,000,000, or 64 per cent, were paid for teachers' wages; \$31,000,000, or 19 per cent, for schoolhouses; and \$28,000,000 for fuel, supplies, and incidental purposes.

It is not generally realized to what extent the expenditure of money for common schools has increased in recent years; the increase has far outstripped the gain in population, as will appear from the following table:

*Expenditure for common schools per capita of population.*

	1879–80.	1892–93.
North Atlantic Division.....	\$1.97	\$3.04
South Atlantic Division.....	.68	1.08
South Central Division.....	.55	1.05
North Central Division.....	2.03	3.07
Western Division.....	2.41	3.94
United States.....	1.56	2.47

Since 1880 the common school expenditure of the United States has been more than doubled, having increased from \$78,000,000 to \$163,000,000.

#### SECONDARY SCHOOLS.

The usual statistical summaries of public and private secondary schools are given in Chapter I, pp. 51–69. For the year ending June 30, 1893, the number of public high schools reporting to the Bureau was 2,812. In these schools 9,489 teachers were employed, and the number of pupils was 232,951. Reports were received from 1,434 private high schools and academies employing 6,261 teachers and giving instruction to 96,147 pupils. The summaries show for each State the number of high schools, the number of teachers and pupils,

the number preparing for college, and the number of students pursuing each of the nine leading high school studies. In this annual report larger space is devoted to secondary schools than to the statistics of all the other educational institutions combined, as will be seen by reference to the detailed tables.

#### HIGHER EDUCATION.

*Universities and colleges* (pp. 69-88).—Of the 451 universities and colleges for men and for both sexes, 310 are coeducational, an increase of more than 3 per cent in two years. The total number of instructors reported by the 451 institutions was 10,247. Of this number, 5,679 were engaged in regular collegiate departments, the remainder being in preparatory, professional, and special departments. The students reported were as follows: Preparatory, 44,054; collegiate, 55,553; resident graduates, 2,625; nonresident graduates, 940; professional, 19,385; total in all departments, 140,053. Of the total number, 23.5 per cent were women and 5.6 per cent were colored. The graduate students have increased from 200 in 1872 to 3,565 in 1892-93.

The property of these institutions is as follows: Volumes in libraries, 5,319,602; value of material equipment, \$109,078,100; productive funds, \$94,500,758. The benefactions amounted to \$6,532,157, and the total income was \$14,601,034.

Among the important events of the year were the affiliation of the Teachers' College, New York City, with Columbia College, the establishment of a school of pure science by the latter, and the opening, to a limited extent, of Brown and Yale universities to women.

*Colleges for women*.—The 143 colleges for women reporting to this office had, in 1892-93, 2,114 instructors and 22,949 students. The material equipment was valued at \$13,794,701, and the endowment funds at \$3,594,947. The income was \$3,070,516, and the benefactions amounted to \$182,981. New institutions for women have been established at Marietta, Ohio, and Lynchburg, Va.

*Colleges of agriculture and the mechanic arts*.—These institutions owe their origin to an act of Congress of July 2, 1862, granting land for the endowment of colleges of agriculture and the mechanic arts. Under said act the General Government has granted 10,400,000 acres of land from which an income of \$632,677.80 was derived in 1892-93. Under the act of Congress of August 30, 1890, these institutions have received to June 30, 1893, a total of \$3,010,000. The State appropriations for these schools amounted to \$1,634,715.18 for the year 1892-93.

*Pecuniary aid for college students*.—Chapter V of Part III contains a compilation of the number of scholarships and fellowships offered by the several universities and colleges of the United States, England, France, and Germany, together with the value and conditions attached to the foundations so far as given by the institutions concerned.

*Professional education.*—The whole number of medical students was 19,752—regular, 16,130; homeopathic, 1,445; eclectic, 773; graduate, etc., 1,404. The number graduating was 4,911, about 25 per cent; dental students numbered 2,852; pharmacists, 3,394.

The number of law students has increased very rapidly during the last five years—3,906, 4,518, 5,252, 6,073, 6,776.

Theological students numbered 7,836. One-half of them get their collegiate training in denominational schools, one-sixth in nonsectarian schools, and only 3 per cent in State universities.

If we consider the number of students in attendance and the necessary current expenses, theological schools are more heavily endowed than any other class of institutions. Two of them have endowments of over \$1,000,000, while ten others have about half a million each.

Summaries of the statistics of normal schools are given on pp. 102–112. In 121 public normal schools there were 1,301 teachers and 28,983 students. The number of graduates reported was 4,491. In 31 private normals 268 teachers, 7,686 students, and 552 graduates were reported. Students pursuing pedagogical or teachers' courses in 708 universities, colleges, high schools, and academies are reported to the number of 16,796. Thus it will be seen that the number of students in 1893 in teachers' training courses in the various institutions was 53,465.

In the same connection a table is given indicating the growth of normal schools for the past five years. It shows, by States, the amounts of money appropriated by State, county, or municipal corporations each year from 1888 to 1893 for the support of normal schools and for normal school buildings. In 1893 the amount thus appropriated for support was \$1,452,914 and for buildings \$816,826.

#### ILLITERACY.

Chapter II is a presentation of the statistics of illiteracy in the United States for 1890, 1880, and 1870, based upon the census reports of those years. The number of illiterates (persons 10 years of age and over unable to read), the population 10 years of age and over, and the per cent of illiterates, by States, will be seen by reference to the first seven tables in the chapter, the figures relating to each class for the three decades being placed in parallel columns on the same page. By this arrangement the progress of the white and the colored, the native white and foreign white population, from 1870 to 1890, can be more easily reviewed.

In 1870 the per cent of illiterates to the total population 10 years of age and over was 20; in 1880 the rate was 17, and in 1890 the per cent had fallen to 13.3.

The per cent of illiteracy of the native white population in 1870 was 10.8; in 1880 it was 8.7, and in 1890 the per cent was 6.2. In 1870 the per cent of illiteracy of the foreign-born white population was 14.4;



and in 1880 the rate was 12, while the tables show that in 1890 the percentage had risen to 13.1.

The table relating to the illiteracy of the colored population tells a still more encouraging story. In 1870 the rate of illiteracy of the colored population 10 years of age and over was 79.9; in 1880 it was 70, and in 1890 it had fallen to 56.8.

The following table shows, in a condensed form, the percentages of illiteracy for the total population, male, female, native white, foreign white, total white, and colored, for 1890, 1880, and 1870, in each of the five divisions of the United States

*Percentage of illiteracy, classified by sex, race, and nativity.*

Division.	Year.	Total.	Male.	Female.	Native white.	Foreign white.	Total white.	Colored.
United States.....	1890	13.3	12.4	14.4	6.2	13.1	7.7	56.8
	1880	17	15.8	18.2	8.7	12	9.4	70
	1870	20	.....	.....	10.8	14.4	11.5	79.9
North Atlantic Division.....	1890	6.2	5.9	6.5	2.3	15.6	5.9	21.7
	1880	6.2	5.4	7	2.8	15.4	5.9	24.2
	1870	7.6	.....	.....	2.2	18.3	7.2	27.7
South Atlantic Division.....	1890	30.9	29.1	32.6	14.6	12.2	14.5	69.1
	1880	40.3	38.8	41.7	20	10.1	19.5	75.1
	1870	46.2	.....	.....	24.2	12.2	23.5	85
South Central Division.....	1890	29.7	27.6	31.9	15	20.2	15.3	61.2
	1880	30.5	37.8	41.3	22	15.6	21.6	76
	1870	44.5	.....	.....	24	16.2	23.4	86
North Central Division.....	1890	5.7	5.2	5.3	3.4	10.6	5.1	32.8
	1880	6.7	6.2	7.2	5	8.9	5.9	41.2
	1870	9.3	.....	.....	7.6	10.1	8.3	56.4
Western Division .....	1890	8.3	8.1	8.7	4.5	10.4	6.2	41.5
	1880	11.3	10.1	13.6	8.6	9.2	8.8	33.2
	1870	15	.....	.....	16	12.9	14.9	16

The remaining tables in the chapter are easily understood. The rank of each State in respect to illiteracy is given and the several classes of population are treated separately, showing the relative progress of each. A chart shows the comparative density of illiteracy in the several States, and several diagrams illustrate the salient facts extracted from the statistical tables.

This is followed by a synoptical table of illiteracy in Europe, compiled from official returns, Hübner's statistics, and other sources. This table contains the latest available statements, and will therefore be very acceptable. The states of Germany in particular make a good showing, in that there are states in which not a single army recruit is found to be illiterate, while the total ratio of illiteracy in the Empire is less than 1 per cent.

#### EDUCATION IN FOREIGN COUNTRIES.

*Belgium.*—Chapter III presents a survey of the educational system of Belgium as developed in the organic laws and official reports.

The system of Belgium resembles in its general form that of France, but is totally different in spirit. Local freedom is not more marked even in English policies, and advantage has been taken of this principle by opposing parties to carry out widely different conceptions of

popular education. The changes effected in the elementary school system under successive laws (i. e., 1842, 1879, and 1884) are traced in the chapter, and the present condition of the schools set forth as shown by recent statistics.

Of the changes noted the most suggestive is the reaction from a uniform system of public secular schools established by the Liberals in 1879 to the mixed public and parochial school system under the Clerical party, which came into power in 1884.

In the department of secondary instruction (*enseignement moyen*) the same questions have arisen as in the United States. Belgium has had less difficulty in securing recognition for the new studies than neighboring countries, but this fact has not solved the problem of the correlation of studies nor of overcrowded programmes.

As regards superior instruction, the union of special technical schools with the four traditional faculties is noticeable in the case, both of the two State and the two private universities. The latter comprise a little more than half the university students, i. e., 3,463 out of a total of 5,634. The departure made in 1876, when the universities were authorized to confer degrees, a function hitherto restricted to a special jury, is confirmed by the law of 1890, which is discussed in the chapter. A brief survey is also presented of industrial and technical schools, for which Belgium is justly noted.

*Great Britain.*—Chapter IV deals with the state-aided elementary school systems (English and Scotch) of Great Britain. From an examination of the statistics presented it appears that the effect of the law for the remission of school fees has been to increase both the amount and the regularity of school attendance. In England the enrollment for 1893 shows an increase of about 3 per cent over that for 1892 in the case of children under 7 years of age, and of  $2\frac{1}{2}$  per cent in the case of older children. The increase of deposits in the school savings banks is interpreted as a disposition on the part of parents to invest the small sums (from 2d. to 6d. per pupil) hitherto paid in weekly tuition fees. Among notable evidences of progress in popular education are the recent acts providing for the education of deaf and dumb and blind children, the act raising the minimum age for exemption (either partial or total) from school attendance in England from 10 to 11 years, and the new regulations for evening schools. These are now virtually transformed from elementary schools to "continuation" schools; that is, schools affording young men and women of the working classes the chance to push the fundamental studies beyond the elementary stage, and to pursue special branches which may be helpful to them in business careers.

A detailed account is given in this chapter of the agitation of the subject of religious instruction in the London school board. Some excitement prevailed when the board issued a special circular for the guidance of teachers in respect to the use of the board syllabus of



religious instruction. The spirit of the document is indicated by the statement as to the "principles" of the Christian religion which the teachers should inculcate. "These principles," says the circular, "include a belief in God the Father as our Creator, in God the Son as our Redeemer, and in God the Holy Ghost as our Sanctifier. The board can not approve of any teaching which denies either the Divine or the human nature of the Lord Jesus Christ, or which leaves on the minds of the children any other impressions than that they are bound to trust and serve Him as their God and Lord." The document was regarded as a religious test, and as such was vehemently opposed by secular associations, by nonconformists of all denominations, and by the great body of the teachers. The results of the school board election just closed,<sup>1</sup> as this matter goes to press, have changed somewhat the aspect of the question. The opposition party polled a majority of nearly 150,000 votes as against the party favoring the policy indicated by the special circular, but owing to the operations of the "cumulative vote" the latter have a majority of 3 in the board. This is a reduction of 12 below their majority in the former board. The result is regarded as a clear indication that the electors are opposed to any disturbance of the settlement of the religious question by the act of 1870.

Recent measures affecting secondary education in England, as noted in the chapter, are the conference on the subject held at Oxford University in October, 1893, and the appointment of a royal commission to investigate and report upon the present condition of this important department of education with a view to needed reforms in organization and improved curricula.

*France.*—A brief outline of the French educational system is given in Chapter V, together with the latest official statistics and a résumé of recent measures affecting secondary schools and university faculties. The enrollment in elementary schools (exclusive of infant schools) in 1891-92 was 5,556,470, or 14.5 per cent of the population. The enrollment exceeded the total number of children of the obligatory school ages (6 to 13), who form 12.1 per cent of the population. This ratio is less than the corresponding ratio for many countries. In England and Scotland, for example, the children 6 to 13 years of age form about 16 per cent of the population. The enrollment for those ages in England is relatively smaller than in France, being 13.7 per cent of the population, but in Scotland the corresponding enrollment rises to 15 per cent of the population.

If the total enrollment in infant schools and classes be included, the ratio to total population rises to 16.4 per cent for France, and to 17 and 16½ per cent for England and Scotland, respectively.

M. E. Levasseur, the distinguished statistician, to whom this office is indebted for advance proofs of the "Statistique de l'enseignement

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<sup>1</sup> The triennial election occurred in November, 1894.

primaire" for 1891-92, notes that the enrollment in primary schools for that year is 37,413 less than for the previous year. The decrease in the enrollment since 1888-89 is about the same as that in the number of births.

The statistics of university faculties (or separate universities) indicate the gradual development of the provincial groups. Whereas so late as 1887-88 the Paris faculties comprised more than half the total number of university students, in 1893 the enrollment in the provincial faculties exceeded that of Paris by 3,177.

The reports of the two French commissions appointed to develop plans for the reorganization of medical studies and the institution of a special course of preparatory scientific study for medical students, together with the decrees giving effect to the recommendations of the commissions, are considered in detail in this chapter.

*British colonies.*—The systems of education developed in the British colonies have a special interest for citizens of the United States. In the system of Ontario, which is described in Chapter VI, local independence has been happily combined with a degree of centralization sufficient to insure economy of means and equality of conditions. The principal features of this system as set forth in a recent monograph by Mr. John Miller, deputy superintendent of education, are presented, and also a survey of the practical workings of the system by Hon. George W. Ross, the minister of education.

The chapter also contains a brief account of the organization and present status of the universities and technical schools of New Zealand, for which the office is indebted to an esteemed correspondent, Mr. Mark Cohen, editor of the Dunedin Evening Star, and further an exposition of the conditions of popular education in India, supplemented by a paper on educational journalism in India, by Thomas Denham, M. A., of Madras, who writes from intimate personal knowledge of the subject.

*Germany.*—Chapter VII contains an account of the recent developments in the teaching of geography in central Europe; it seems very desirable to enter into the history of certain leading branches of study so as to gain an insight into the development of the methods of teaching. The present historical sketch is full of interest for teachers as well as professional geographers. Prof. John Goodison, of Ypsilanti, recently deceased, has furnished some descriptions of methods applied in Europe.

A teacher in Munich, Mr. Lorenz Reiser, contributes (Chapter VIII) a brief statement of the common school system of Bavaria, some features of which commend themselves to the attention of American educators. Several contributions to this report touch upon Germany and the German-speaking states in central Europe, and will attract the reader's attention on account of the high reputation German pedagogy has long borne and still retains for efficient methods.

*Russia.*—The subject of education in Russia was presented in extenso in my report for 1890-91 (pp. 194-262).

The current of operations in that country indicates continual effort to more thoroughly assimilate the border provinces (so as to increase the home influence in the faculties of the universities and schools on the western border) and to cultivate a distinct national spirit, to further develop the village industries, and to extend the facilities for industrial and higher education of women.

The Russian exhibit at Chicago gave opportunity for a study of institutions not previously reported, the exhibit from the ministry of public instruction, the Pedagogical Museum, and the Empress Marie institutions being especially noteworthy.

*Higher education of women in Russia.*—Prince Serge Wolkonsky, delegate from the ministry of public instruction in Russia to the Columbian Exposition, presents (Chapter VIII of Part II) an exposé of the educational facilities given to girls in Russia, many of the institutions being under imperial patronage, and the object being to train the girls for family life or for teaching school, as well as industrially, so that those who are obliged to may earn a livelihood by the skill of their hands. He describes the vicissitudes to which the institutions for the higher education of women are subject. The remarkable intellectual development in mathematics, science, and literature of some of the Russian women may be considered as pointing toward the same desire for the broadening of woman's sphere that is active in the countries of western Europe and America.

*Education in Uruguay.*—A first attempt is made (Chapter IX) to present a statement of the system of education in Uruguay. It is noteworthy, as in other South American countries, that prominent educators have been detailed from Uruguay to make a thorough study of the newest methods in pedagogical science in Europe and North America. The adaptability of kindergarten work, and of manual and physical training, have been taken under special consideration. Experiments are in progress with a view to the introduction of kindergartens in Montevideo. A higher school for agriculture, to train experts, has been started. Uruguay declared its independence of Spanish rule in 1825, its first public schools and "junta," or body of inspectors, date from 1827, but the organization of the school system, with a special department of public instruction in charge, is accredited to Don Pedro Varela (in 1877), who is called by one of his biographers the Horace Mann of Uruguay.

It is the declared intention to have instruction gratuitous through all grades, and compulsory between the ages of 6 and 14. The ratio of enrollment to population in the elementary grades is 9.25 per cent. The cost of education for each pupil enrolled is \$12.06; for each pupil in average attendance, \$16.95. Of the teachers employed, two-thirds are reported to be normal graduates, and three-fourths lay teachers,



one-fourth parochial. The Government furnishes books and all necessary material for school purposes. The minister of public instruction has general supervision of the schools, with a national and a technical inspector and five other officials to aid him in the department of public instruction at Montevideo.

*Child study.*—The chapter on child study (Chapter X) inserted in this report will be found to contain instructive contributions from the leading American representatives of this modern movement. While in the Old World few other than university professors have made attempts at a systematic study of this kind, in this country it has enlisted teachers of all classes, and both the professional and other journals to its aid. To Dr. G. Stanley Hall, president of Clark University (Worcester, Mass.), is due the credit of inaugurating this valuable movement.

*Bibliography.*—The recent popularity of Herbart's pedagogy and philosophy have made a bibliography (Chapter XI) of Herbartian literature desirable. In Chapter X is printed also such a bibliography of child study, compiled in this Bureau.

*Foreign statistics.*—The table of statistics of elementary schools in foreign countries printed in my report for 1890-91 is again inserted with valuable additions based upon the latest official returns.

#### EDUCATION AT THE WORLD'S COLUMBIAN EXPOSITION.

Part II is devoted entirely to reports which were called forth on the occasion of the World's Fair. It opens with the programme of the International Congress of Education. Then follows a symposium of American views and comments on the educational exhibits at Chicago.

In the third chapter of this part are collected the criticisms on American education advanced by representatives of the German Government at Chicago. They will be read with great interest because of the authoritative character of the writers.

In Chapter IV will be found the substance of two articles upon American education and the educational exhibits at Chicago from the pen of an educational expert of international reputation, M. Jules Steeg, director of the Musée Pédagogique, Paris. His comments and criticisms upon our schools were inspired by actual observation of their daily exercises as well as by their exhibits.

The chapter contains extracts also from reports by M. Jules Violle, commissioned to study the state and tendencies of science in the United States, and by M. Henri Le Soudier on the exhibits of publishers and booksellers. The latter is particularly full with respect to these industries in the United States and Germany.

In Chapter V will be found a survey of medical instruction in the United States as presented in the reports of two French commissioners appointed to make a special study of the subject. One of these reports was prepared by Dr. Bonet-Maury, member of the general council of

the Paris faculties, who confined himself to an investigation of the entrance requirements of the chief medical schools and to a comparison of the same with the preparation for professional study as required in France.

The second report, which is much more extensive, was prepared by Dr. Marcel Baudouin and M. R. Mathieu, appointed by the French Government as commissioners to the Chicago Exposition, the former charged also with the special investigation of medical schools and the status of medical instruction in the United States. The result of these investigations is a quarto of 368 pages, which is claimed by Dr. Baudouin to be the most comprehensive work on the subject that has yet appeared, not excepting even reports by Americans themselves. The first part of the report treats in detail of the scientific institutions of the Government at Washington, schools of medicine, departments of biology and hospitals. It deals also with groups of institutions and with social customs, especially such as affect health and sanitation. The second part of Dr. Baudouin's report comprises a general survey of the conditions, standards, and results of medical instruction in the United States, which is reproduced substantially in the chapter. Particularly suggestive is the discussion of the rôle of women physicians. It should be mentioned that the appendixes to the report comprise a tabular view of the laws regulating medical practice in the United States, a complete list of the medical schools existing in 1893, and a very full description of the exhibitions of surgical instruments and apparatus for physiological and anthropological laboratories displayed at Chicago from all countries. For obvious reasons these have not been reproduced in this chapter.

Chapter VI consists of notes and observations by the Italian, Swedish, Danish, and Russian delegates. Signor Luigi Bodio, the director of the royal statistical bureau of Italy and one of the most eminent statisticians of the world, records in a generous manner his recognition of the end and aim of the methods of such of our educational devices as come under his inspection.

Prof. A. Ghisleri makes a careful study of the school furniture and apparatus, and a comparison of the methods that he observed in the New York City schools with the methods of his own country, Italy.

Dr. Osterberg, of Sweden, Miss Frederiksen, of Denmark, and M. Kovaleski, the delegate from the Russian ministry of instruction, make interesting comparative studies of our educational exhibits.

Another chapter (Chapter VII) contains an English version of a report on American technological schools made by Professor Riedler of the Royal Polytechnicum at Charlottenberg, near Berlin. This report is copiously illustrated, showing the courses of study of this kind of schools in a very novel manner. The author offers some standards of measurement hitherto not applied, and the graphic presentation of the courses of study facilitate their application.



In Chapter VIII of this part of the report I have printed a report of the proceedings of the World's Congress of Librarians held at Chicago during the Exposition. Under the presidency of the Hon. Melvil Dewey, the able secretary of the State board of regents of New York, a remarkable series of articles was prepared, all of them relating to library economy. In the interest of the librarians of the 4,000 public libraries in the United States I have obtained a complete set of these papers and offer the same in this report. I am sure that these valuable papers will be appreciated not only by those immediately connected with libraries but by all intelligent persons interested in libraries.

In the third part of this report Prof. B. A. Hinsdale, of the University of Michigan, contributes a chapter of "Documents illustrative of American educational history" (Chapter I). This will be of particular interest, because it gives some of the important school legislation of the colonial period; but no attempt has been made to gather all the acts of the colonial legislatures on this subject, nor is it claimed that the laws quoted stand for more territory than the colonies by which they were passed. This paper also gives with considerable detail the history of the Congressional grants of land and money for common schools, universities, and agricultural colleges. It traces the agitation for and the struggle in behalf of the bill establishing this Bureau and presents the views of many statesmen and scholars on the establishment of a national university—a question whose interest begins with Washington and the founding of the National Government, and is to-day attracting attention from statesmen and educators. The last section of the paper is a compilation of the provisions of all the State constitutions relating to education from 1776 to the present time. It is believed to be complete, is divided into periods, and is of value not only as a matter of reference, but also as a means of comparative study, for by it the remarkable growth of the estimate set on education, as seen in the organic laws of the several States, can be distinctly traced.

Chapter II treats of the report of the committee of ten appointed by the National Educational Association to take up the important subject of courses of instruction in the secondary schools. Not only is there great confusion in the existing curricula, but actual waste of the time and energy of students, not because of poor teaching—for the teachers of secondary schools are on the whole the most skillful of all—but because of defective courses of study. The first step toward the much needed reform in these particulars was a conference between leading representatives of secondary education in different sections of the country, including specialists in the several branches of study to be considered. Such a conference was secured through the action of the National Educational Association, which appointed a committee under the chairmanship of Dr. Eliot, president of Harvard University, and appropriated \$2,500 for its expenses. Nine subcommittees were

appointed upon whose expert opinions touching the various phases of secondary instruction the final report of the committee was based. Thirty thousand copies of this report were printed and distributed by this Bureau under your authority.

The report of the committee is reprinted in this chapter together with several reviews of the same. These have been selected as typical at once of the lines along which the report has been most sharply criticised and those on which it is most generally indorsed. The review by Dr. Nicholas Murray Butler emphasises the weak points of our secondary school work, i. e., the unorganized, sporadic character of the courses in modern languages and natural sciences, weaknesses that are reflected even in the committee's model programme. His analysis of the programmes brings into clear view the simultaneous arrangements which permit students in different courses to be united in many subjects.

Dr. Eliot's article on the unity of educational reform sets forth the elements that are common to all educational work, and shows the bearing of the report of the committee upon this integral process.

In my address before the department of superintendents at Richmond, I claimed for the high school course, as laid out by the school authorities of the cities of the country, that it is more rational than the secondary course of the private preparatory schools prescribed for them by the colleges, because it opens the mind to all the phases of human learning presented by nature and humanity. The problem of secondary instruction involves a thorough inquiry into the relative educational values of different branches. In his history of the work of the committee Dr. Baker has ably defended this position. He takes exception to the report as favoring "an extreme theory of equivalence of studies." The importance of this central problem is reinforced by Principal O. D. Robinson in view of the fact that 90 per cent of high school pupils do not enter college.

Superintendent Nightingale has confined himself chiefly to the results of the special conference on English. Of all the studies discussed this suffers most from the want of systematized instruction, and further from its unsatisfactory treatment in college entrance examinations. Hence a reason for special attention to this subcommittee report.

The chapter concludes with a bibliography of the report of the committee, which is substantially complete up to the time that this goes to press.

Chapter III contains a historical account of the National Educational Association, followed by a statement of the organization and functions of this powerful educational agency; its constitution is quoted, and a list of its annual meetings with the name of its officers is given, as well as a catalogue of the papers and addresses delivered since its organization in 1869. It is a fortunate circumstance that the first president of the association, Mr. Z. Richards, could undertake a sketch

of its historical development. He has with singular faithfulness followed the growth of this worthy institution. The lists of principal subjects considered is complete; a search through it reveals a wealth of educational ideas and suggestions.

The third part of the report also contains an article on "The education of the negro, its characteristics and facilities," contributed by Mr. Welford Addis, who takes the ground that there are three features which distinguish the education of the American negro and to a large extent differentiate it from that of the white people among whom he lives. These facts are, (1) the cost of education of the negro is borne by the white portion of the community; (2) this education is almost always elementary; (3) it is becoming more industrial in character.

I have the honor to be, very respectfully, your obedient servant,

W. T. HARRIS,  
*Commissioner.*

Hon. HOKE SMITH,  
*Secretary of the Interior.*



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## PART I.

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- CHAP. I.—Statistical Summaries.  
II.—Illiteracy in the United States.  
III.—The System of Public Education in Belgium.  
IV.—Elementary Education in Great Britain.  
V.—Education in France.  
VI.—Education in Ontario, New Zealand, and India.  
VII.—The Teaching of Geography in Central Europe.  
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# PART I.

## CHAPTER I.

### STATISTICAL SUMMARIES.

CONTENTS: *I.—General summary of pupils. II.—State common school systems (p. 23). III.—City common school systems (p. 39). IV.—Public high schools and private secondary schools (p. 51). V.—Universities and colleges (p. 69). VI.—Colleges for women (p. 88). VII.—Colleges of agriculture and the mechanic arts (p. 92). VIII.—Schools of theology, law, and medicine (p. 96). IX.—Normal schools (p. 102).*

#### I.—GENERAL SUMMARY OF PUPILS OF ALL GRADES IN PUBLIC AND PRIVATE SCHOOLS AND INSTITUTIONS.

The following table gives the number of pupils of all grades in the United States,<sup>1</sup> classified according to grade of instruction imparted, instead of according to the character of institution attended. Thus, all secondary pupils in colleges have been classed as secondary, and all elementary pupils as elementary, even though attending (in the "preparatory" department) an institution of secondary grade.

The statistics of private elementary education have never been completely gathered, and the figures in column 3 are, therefore, largely estimated; they are known to be much less than the facts would warrant, and should possibly be increased as much as 50 per cent. The returns of pupils receiving secondary instruction, both public and private, are also incomplete.

The total number of pupils and students of all grades in 1892-93 in public and private schools, as given by the table, was 15,083,630, or 22.5 per cent of the total population.

The increase over the preceding year was 370,697, or 2.52 per cent.

About 10 persons in every 44 during the year in question received formal instruction of some kind.

Of the whole number of pupils and students, 96.2 per cent were receiving elementary instruction, 2.7 per cent secondary instruction, and 1.1 per cent higher instruction.

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<sup>1</sup> Excluding, in general, evening schools; music, elocution, art, industrial training, trades, and private business schools; schools for the defective, dependent, and delinquent classes, and Indian schools. These collectively enroll some 300,000 pupils.

Only 1 pupil out of 37 was of secondary (or high school) grade, and 1 in 94 of collegiate grade.

As compared with the total population, 1 person in every 161 was a secondary pupil and 1 in 413 was under higher instruction. On this basis, a city of 10,000 inhabitants would furnish on an average 62 secondary pupils and 24 higher students (the latter including professional and normal students).

Of all pupils and students, 90 per cent attended public schools and institutions and 10 per cent private. This percentage of private pupils is, however, probably too small, as the records of private school attendance are very incomplete, particularly in the elementary grades.

## Total number of pupils or students of each grade, in both public and private schools.

NOTE.—The classification of States made use of in the following table is the same as that adopted by the United States census, and is as follows: *North Atlantic Division*: Maine, New Hampshire, Vermont, Massachusetts, Rhode Island, Connecticut, New York, New Jersey, and Pennsylvania. *South Atlantic Division*: Delaware, Maryland, District of Columbia, Virginia, West Virginia, North Carolina, South Carolina, Georgia, and Florida. *South Central Division*: Kentucky, Tennessee, Alabama, Mississippi, Louisiana, Texas, Arkansas, and Oklahoma. *North Central Division*: Ohio, Indiana, Illinois, Michigan, Wisconsin, Minnesota, Iowa, Missouri, North Dakota, South Dakota, Nebraska, and Kansas. *Western Division*: Montana, Wyoming, Colorado, New Mexico, Arizona, Utah, Nevada, Idaho, Washington, Oregon, and California.

Division.	Pupils receiving elementary instruction ("primary" and "grammar" grades).				Pupils receiving secondary instruction ("high school" grade). <i>a</i>		Students receiving higher instruction.									
	Public.	Private (largely estimated).	Public. <i>b</i>	Private (in preparatory schools, academies, seminaries, etc.).	In universities and colleges. <i>c</i>				In schools of medicine, law, and theology. <i>e</i>			In normal schools. <i>g</i>				
					Public. <i>d</i>	Private.	Total.	Public. <i>f</i>	Private.	Total.	Public.	Private. <i>h</i>	Total.			
<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>10</b>	<b>11</b>	<b>12</b>	<b>13</b>	<b>14</b>			
The United States .....	13, 277, 768	1, 240, 453	256, 628	153, 792	17, 974	61, 724	79, 698	5, 459	38, 220	43, 679	27, 926	7, 286	35, 212			
North Atlantic Division .....	3, 148, 918	489, 761	92, 442	45, 673	2, 248	24, 680	26, 928	198	16, 549	16, 747	11, 988	259	12, 247			
South Atlantic Division .....	1, 908, 393	123, 178	13, 215	21, 433	1, 587	8, 795	10, 382	652	4, 230	4, 882	1, 752	1, 073	2, 825			
South Central Division .....	2, 540, 794	158, 057	15, 993	27, 609	1, 770	9, 129	10, 899	561	4, 075	4, 636	3, 005	545	3, 550			
North Central Division .....	5, 067, 647	420, 354	121, 147	51, 197	10, 469	16, 923	27, 392	3, 462	12, 725	16, 187	9, 688	4, 175	13, 863			
Western Division .....	612, 016	49, 103	13, 921	7, 820	1, 900	2, 197	4, 097	586	641	1, 227	1, 493	1, 234	2, 727			

*a* Including pupils in preparatory or academic departments of higher institutions, public and private, and excluding elementary pupils, who are classed in columns 2 and 3. This is made up chiefly from the returns of individual high schools to the Bureau, and is considerably too small, as there are a great many secondary pupils outside the completely organized high schools whom there are no means of enumerating.

*b* Including colleges for women, agricultural and mechanical (land-grant) colleges, and scientific schools. Students in law, theological, and medical departments are excluded, being tabulated in columns 9-11. Students in academic and preparatory departments are also excluded, being tabulated in columns 4 and 5.

*c* Mainly State universities and agricultural and mechanical colleges.

*d* Including veterinary and nurses' training schools.

*e* Mainly in schools or departments of medicine and law attached to State universities.

*f* Nonprofessional pupils in normal schools are included in columns 4 and 5.

*g* Private normal schools are, with few exceptions, scarcely superior to the ordinary secondary schools.

*Total number of pupils or students of each grade, in both public and private schools—Continued.*

Division.	Summary of higher instruction.		Summary of pupils by grade.			Summary—public and private.		Grand total.
	Public.	Private.	Elementary.	Secondary.	Higher.	Public.	Private.	
<b>I</b>	<b>15</b>	<b>16</b>	<b>17</b>	<b>18</b>	<b>19</b>	<b>20</b>	<b>21</b>	<b>22</b>
The United States .....	51,359	107,230	14,518,221	410,420	154,980	13,585,755	1,497,875	15,083,630
North Atlantic Division.....	14,434	41,488	3,638,679	138,115	55,322	3,255,794	576,922	3,832,716
South Atlantic Division.....	3,991	14,098	2,031,571	34,708	18,089	1,925,599	158,760	2,084,368
South Central Division.....	5,336	13,749	2,698,851	43,512	19,085	2,562,033	199,415	2,761,448
North Central Division.....	23,619	23,823	5,488,001	172,344	53,842	5,212,413	501,774	5,714,187
Western Division .....	3,979	4,072	691,119	21,741	8,051	629,916	60,995	690,911



## II.—STATISTICS OF STATE COMMON SCHOOL SYSTEMS.

NOTE.—The common schools, as here understood, include public day schools of elementary and secondary grade (i. e., public primary, grammar, and high schools). Classification by race is given elsewhere in this report.

The enrollment here given is less than that found by adding together columns 2 and 4 in Table 1, in that it does not embrace secondary pupils in public collegiate institutions.

## SUMMARY.

The figures for 1892-93 in the following statement are made up from returns from the different States for that year, except in a few instances, where the latest figures obtainable were used. The results are therefore given subject to correction.

	1891-92.	1892-93.	Increase or decrease.	Per cent of increase or decrease.
<i>I.—General statistics.</i>				
Population of the United States (estimated).....	64,834,561	66,087,909	I .. 1,253,339	I .. 1.93
Number of persons 5 to 18 years of age.....	19,192,894	19,552,491	I .. 359,597	I .. 1.87
Number of different pupils enrolled in the schools .....	13,255,921	13,510,719	I .. 254,798	I .. 1.92
Per cent of persons 5 to 18 years of age enrolled.....	69.06	69.10	I .. .04	.....
Average daily attendance.....	8,560,603	8,855,717	I .. 295,114	I .. 3.45
Ratio to enrollment (per cent).....	64.58	65.54	I .. .96	.....
Average length of school term (days) .....	136.9	136.7	D .. .2	.....
Aggregate number of days' attendance.....	1,171,800,677	1,210,754,931	I .. 38,954,254	I .. 3.33
Average number for each person 5 to 18 years of age.....	61.1	61.9	I .. .8	.....
Average number attended by each pupil enrolled.....	88.4	89.6	I .. 1.2	.....
Male teachers.....	121,573	122,056	I .. .483	I .. .40
Female teachers.....	252,653	260,954	I .. 8,301	I .. 3.29
Whole number of teachers.....	374,226	383,010	I .. 8,784	I .. 2.35
Per cent of male teachers.....	32.5	31.9	D .. .6	.....
Average monthly wages of teachers in 42 States:				
Male teachers.....		\$46.39		
Female teachers.....		\$38.46		
Number of schoolhouses.....	228,853	235,426	I .. 6,573	I .. 2.88
Value of school property.....	\$383,167,769	\$393,435,039	I .. \$10,267,270	I .. 3.48
Average value per schoolhouse.....	\$1,679	\$1,692	I .. \$13.60	.....
Average value per capita of average attendance.....	\$44.76	\$45.00	I .. \$0.24	.....
<i>II.—Finances.</i>				
Receipts:				
Income of permanent funds .....	\$8,081,255	\$8,674,945	I .. \$593,690	I .. 7.35
From State taxes .....	\$29,908,076	\$33,694,813	I .. \$3,786,737	I .. 12.66
From local taxes .....	\$105,629,838	\$108,425,054	I .. \$2,795,216	I .. 2.65
From other sources .....	\$13,555,886	\$14,228,070	I .. \$672,184	I .. 4.96
Total revenue .....	\$157,175,055	\$165,022,882	I .. \$7,847,827	I .. 4.99
Per cent of the total revenue derived from—				
Permanent funds .....	5.1	5.3	I .. .2	.....
State taxes.....	19.1	20.4	I .. 1.3	.....
Local taxes .....	67.2	65.7	D .. 1.5	.....
Other sources.....	8.6	8.6		.....
Expenditures:				
For sites, buildings, furniture, libraries, and apparatus .....	\$29,344,559	\$31,439,580	I .. \$2,095,021	I .. 7.14
For salaries of teachers and superintendents.....	\$100,298,256	\$104,090,607	I .. \$3,792,351	I .. 3.78
For other purposes .....	\$26,174,197	\$27,813,091	I .. \$1,638,894	I .. 6.26
Total expenditures .....	\$155,817,012	\$163,343,278	I .. \$7,526,266	I .. 4.83
Average expenditure per capita of population.....	\$2.40	\$2.47	I .. \$0.07	.....
Average expenditure per pupil:				
For sites, buildings, etc.....	\$3.42	\$3.55	I .. \$0.13	.....
For salaries.....	\$11.72	\$11.76	I .. \$0.04	.....
For other purposes.....	\$3.06	\$3.14	I .. \$0.08	.....
Total .....	\$18.20	\$18.45	I .. \$0.25	.....
Percentage of the total expenditure devoted to—				
Sites, buildings, etc.....	18.8	19.2	I .. .4	.....
Salaries.....	64.4	63.7	D .. .7	.....
Other purposes.....	16.8	17.1	I .. .3	.....

TABLE 1.—*The total population, the school population, and the adult male population.*

State or Territory.	Approximate total population in 1893.	School population.			Per cent of males (1890).	Approximate adult male population in 1893.
		Approximate number of children 5 to 18 years of age in 1893.				
		Males.	Females.	Total.		
1	2	3	4	5	6	7
United States .....	66,087,900	9,868,033	9,684,458	19,552,491	50.47	17,924,401
North Atlantic Division.....	18,295,500	2,331,680	2,317,312	4,648,992	50.15	5,311,750
South Atlantic Division.....	9,283,293	1,592,811	1,566,230	3,159,041	50.43	2,113,259
South Central Division.....	11,620,017	2,043,872	1,990,944	4,034,816	50.65	2,670,472
North Central Division.....	23,377,700	3,466,830	3,389,360	6,856,190	50.56	6,487,310
Western Division .....	3,511,390	432,840	420,612	853,452	50.70	1,341,610
North Atlantic Division:						
Maine .....	650,100	80,820	79,080	159,900	50.43	197,900
New Hampshire.....	385,900	43,050	42,940	85,990	50.06	121,100
Vermont.....	332,500	42,260	39,700	81,960	51.55	101,700
Massachusetts.....	2,359,400	268,900	270,700	539,600	49.83	700,800
Rhode Island.....	382,200	46,370	46,800	93,170	49.77	110,600
Connecticut.....	786,400	93,000	92,100	185,100	50.24	236,150
New York.....	6,179,000	758,450	759,950	1,518,400	49.95	1,823,000
New Jersey.....	1,628,000	212,330	211,542	423,872	50.09	465,900
Pennsylvania.....	5,592,000	786,500	774,500	1,561,000	50.38	1,554,600
South Atlantic Division:						
Delaware (1890).....	168,493	24,071	23,420	47,491	50.69	47,559
Maryland.....	1,077,000	158,200	157,100	315,300	50.18	279,700
District of Columbia .....	262,260	32,310	34,240	66,550	48.55	73,400
Virginia.....	1,723,000	296,700	291,800	588,500	50.41	394,100
West Virginia.....	800,800	136,100	133,200	269,300	50.56	190,400
North Carolina.....	1,688,000	301,600	295,200	596,800	50.54	357,500
South Carolina.....	1,202,000	225,400	221,100	446,500	50.48	246,100
Georgia.....	1,924,000	345,450	337,650	683,100	50.57	416,900
Florida.....	437,800	72,980	72,520	145,500	50.17	107,600
South Central Division:						
Kentucky.....	1,946,000	322,030	315,270	637,300	50.53	471,900
Tennessee.....	1,806,000	314,500	303,500	618,000	50.89	411,200
Alabama (1890).....	1,513,017	273,812	266,414	540,226	50.69	324,822
Mississippi.....	1,352,000	251,800	244,200	496,000	50.78	284,150
Louisiana.....	1,178,000	201,500	179,700	401,200	50.22	264,000
Texas.....	3,491,000	442,400	431,800	874,200	50.61	597,200
Arkansas.....	1,183,000	214,250	207,950	422,200	50.75	270,400
Oklahoma.....	151,000	23,580	22,010	45,590	51.73	46,800
North Central Division:						
Ohio.....	3,723,000	534,200	521,800	1,056,000	50.57	1,031,000
Indiana.....	2,253,000	335,800	329,800	665,600	50.45	611,600
Illinois.....	4,041,000	574,900	567,100	1,142,000	50.34	1,133,000
Michigan.....	2,168,000	303,500	298,500	602,000	50.42	639,300
Wisconsin.....	1,815,000	273,200	269,100	542,300	50.37	496,700
Minnesota.....	1,439,000	210,150	206,150	416,300	50.48	415,600
Iowa.....	1,989,000	304,800	295,300	600,100	50.79	541,300
Missouri.....	2,859,000	448,800	440,700	889,500	50.45	753,200
North Dakota.....	245,800	34,690	32,420	67,110	51.67	75,290
South Dakota.....	308,900	46,290	44,190	90,480	51.16	90,920
Nebraska.....	1,122,000	172,700	165,300	338,000	51.08	319,600
Kansas.....	1,414,000	227,800	219,000	446,800	50.98	379,800
Western Division:						
Montana.....	159,800	14,580	14,280	28,860	50.52	79,090
Wyoming.....	85,500	9,450	8,790	18,240	51.78	38,090
Colorado.....	503,100	55,980	54,720	110,700	50.56	201,300
New Mexico.....	164,000	23,510	22,520	46,030	51.07	48,000
Arizona.....	76,120	9,775	9,575	19,350	50.52	30,250
Utah.....	244,600	40,150	39,210	79,360	50.59	64,080
Nevada.....	43,170	4,790	4,652	9,442	50.73	19,760
Idaho.....	107,000	14,900	14,070	28,970	51.43	39,940
Washington.....	446,800	51,915	49,485	101,400	51.20	187,900
Oregon.....	380,300	51,790	50,710	102,500	50.52	135,400
California.....	1,301,000	156,000	152,600	308,600	50.54	497,800

TABLE 2.—*Relation of the school population to the total population and to the adult male population; proportion of the white school population of foreign birth or extraction; percentage of foreign born of total population.*

State or Territory.	Number of children 5 to 18 years of age to every 100 persons of the total population.			Number of adult males to every 100 children 5 to 18 years of age, in 1890.	Percentage of white children 5 to 18 years of age that were of foreign birth or parentage in 1890.	Percentage of foreign born of total population.		
	1870.	1880.	1890.			1870.	1880.	1890.
1	2	3	4	5	6	7	8	9
United States.....	31.27	30.04	29.61	91.4	<i>Per ct.</i> 33.5	<i>Per ct.</i> 14.44	<i>Per ct.</i> 13.32	<i>Per ct.</i> 14.77
North Atlantic Division.....	28.30	26.87	25.39	114.4	45.8	20.49	19.40	22.34
South Atlantic Division.....	33.02	32.24	34.04	66.8	6.6	2.85	2.29	2.35
South Central Division.....	33.92	33.13	34.76	65.9	8.6	3.62	3.08	2.93
North Central Division.....	32.40	30.63	29.33	94.6	41.5	17.97	16.80	18.16
Western Division.....	25.57	25.13	24.33	156.7	44.7	31.64	28.29	25.46
North Atlantic Division:								
Maine.....	28.01	25.71	24.60	123.7	25.0	7.80	9.07	11.94
New Hampshire.....	24.75	22.80	22.29	140.8	38.4	9.30	13.34	19.21
Vermont.....	27.18	25.96	24.65	124.1	33.4	14.27	12.33	13.26
Massachusetts.....	25.51	23.98	22.87	129.9	60.5	24.24	24.87	29.35
Rhode Island.....	25.66	24.64	24.38	118.7	62.4	25.49	26.76	30.77
Connecticut.....	25.86	24.97	23.54	127.6	54.6	21.14	20.82	24.60
New York.....	28.09	26.32	24.57	120.1	54.8	25.97	23.83	26.19
New Jersey.....	29.01	27.98	26.04	109.9	48.3	20.85	19.60	22.77
Pennsylvania.....	30.55	29.43	27.92	99.6	32.3	15.48	13.73	16.08
South Atlantic Division:								
Delaware.....	31.84	29.11	28.19	100.1	17.3	7.31	6.46	7.81
Maryland.....	31.30	29.89	29.28	88.7	24.4	10.68	8.86	9.05
District of Columbia.....	27.01	26.87	25.38	110.3	26.3	12.34	9.64	8.15
Virginia.....	32.39	32.43	34.16	67.0	2.8	1.12	0.97	1.11
West Virginia.....	34.13	33.37	33.62	70.7	5.9	3.87	2.95	2.48
North Carolina.....	33.60	32.30	35.35	59.9	0.7	0.28	0.27	0.23
South Carolina.....	33.15	33.21	37.14	55.1	2.3	1.14	0.77	0.54
Georgia.....	34.42	33.17	35.50	61.0	2.1	0.94	0.69	0.66
Florida.....	34.03	32.82	33.23	74.0	11.5	2.65	3.68	5.86
South Central Division:								
Kentucky.....	34.41	33.14	32.76	74.0	8.7	4.80	3.61	3.19
Tennessee.....	34.13	33.44	34.22	66.5	2.9	1.53	1.03	1.13
Alabama.....	34.40	33.37	35.70	60.1	3.2	1.00	0.77	0.98
Mississippi.....	33.70	34.12	36.60	57.3	3.1	1.35	0.81	0.62
Louisiana.....	31.11	31.93	34.04	65.8	17.8	8.51	5.76	4.45
Texas.....	34.80	32.60	35.10	68.3	16.9	7.62	7.20	6.84
Arkansas.....	34.16	33.15	35.68	64.0	3.5	1.04	1.29	1.26
Oklahoma.....			30.18	102.7	9.6			4.43
North Central Division:								
Ohio.....	31.74	29.75	28.37	97.6	30.4	13.98	12.35	12.51
Indiana.....	33.75	31.37	29.54	91.9	17.8	8.42	7.29	6.67
Illinois.....	32.24	30.66	28.26	99.2	47.0	20.23	18.96	22.01
Michigan.....	30.28	28.37	27.77	106.2	56.1	22.63	23.73	25.97
Wisconsin.....	33.57	30.85	29.88	91.6	72.4	34.56	30.82	30.78
Minnesota.....	32.45	30.43	28.93	99.8	76.4	36.55	34.28	35.90
Iowa.....	33.06	31.40	30.17	90.2	42.6	17.14	16.11	16.95
Missouri.....	33.57	32.35	31.11	84.7	22.5	12.91	9.76	8.77
North Dakota.....			27.30	112.2	80.3			44.58
South Dakota.....	23.74	24.34	29.29	100.5	61.2	33.95	38.32	27.69
Nebraska.....	28.07	29.88	30.12	94.5	42.1	25.00	21.53	19.13
Kansas.....	29.83	31.73	31.59	85.0	26.4	13.28	11.05	10.36
Western Division:								
Montana.....	10.20	17.10	18.06	274.0	49.4	38.74	29.42	32.61
Wyoming.....	9.39	18.06	21.33	208.8	47.2	38.53	28.14	24.57
Colorado.....	22.47	18.72	22.00	181.8	36.3	16.55	20.48	20.38
New Mexico.....	31.90	29.85	28.07	104.3	13.2	6.12	6.73	7.33
Arizona.....	16.78	19.59	25.42	156.4	57.1	60.15	39.69	31.52
Utah.....	35.05	33.39	32.45	80.7	66.6	35.38	30.56	25.52
Nevada.....	12.56	18.22	21.87	209.3	60.8	44.25	41.20	32.14
Idaho.....	11.30	22.98	27.07	137.9	41.1	52.57	30.59	20.69
Washington.....	26.96	27.19	22.60	185.3	39.3	20.97	21.04	25.76
Oregon.....	32.34	28.63	26.96	132.1	27.9	12.76	17.45	18.27
California.....	24.48	25.03	23.72	161.3	51.8	37.45	33.87	30.32



TABLE 3.—Number of pupils enrolled in the common schools at various periods, and relation of the enrollment to the school population.

State or Territory.	Whole number of pupils enrolled on the school registers during the school year, excluding duplicates.				Number of pupils so enrolled for every 100 children 5 to 18 years of age.			
	1870-71.	1879-80.	1889-90.	1892-93.	1870-71.	1879-80.	1889-90.	1892-93.
1	2	3	4	5	6	7	8	9
United States.....	7,561,582	9,867,505	12,722,581	13,510,719	61.45	65.50	68.61	69.10
North Atlantic Division.	2,743,344	2,930,345	3,112,622	3,228,816	77.95	75.17	70.45	69.43
South Atlantic Division.	603,619	1,242,811	1,785,489	1,919,980	30.51	50.74	53.22	60.77
South Central Division.	767,839	1,371,975	2,293,579	2,554,655	34.17	46.43	60.14	63.31
North Central Division.	3,300,660	4,033,828	5,015,217	5,183,453	76.87	75.84	76.46	75.60
Western Division.	146,120	288,546	515,677	623,815	51.77	64.96	70.01	73.10
North Atlantic Division:								
Maine.....	a152,600	149,827	139,676	136,868	a87.35	89.80	85.88	85.56
New Hampshire.....	b1,957	64,341	59,813	61,703	91.31	81.32	71.28	71.75
Vermont.....	c65,384	75,238	d65,608	e65,314	87.21	87.21	87.21	87.21
Massachusetts.....	273,661	306,777	371,492	391,745	72.34	71.76	72.56	72.62
Rhode Island.....	a54,000	40,404	52,774	53,695	a59.24	59.59	62.65	57.64
Connecticut.....	113,588	119,694	126,505	133,237	80.83	76.97	72.02	71.98
New York.....	1,028,110	1,031,593	1,042,160	1,083,228	82.98	77.10	70.71	71.33
New Jersey.....	d169,430	204,961	234,072	249,588	63.20	64.77	62.21	58.89
Pennsylvania.....	a834,614	937,310	1,020,522	1,053,438	76.35	74.37	69.53	67.48
South Atlantic Division:								
Delaware.....	20,058	27,823	31,434	g33,174	50.04	65.20	66.19	g67.93
Maryland.....	115,633	162,431	181,251	199,402	46.70	58.13	60.37	63.24
District of Columbia.	15,157	26,439	36,966	39,764	41.00	55.40	63.10	59.76
Virginia.....	131,088	220,736	342,269	348,471	32.34	45.03	60.51	59.22
West Virginia.....	76,999	142,850	193,064	208,217	49.47	69.21	75.27	77.32
North Carolina.....	a115,000	252,612	322,533	356,958	a31.23	55.87	56.39	59.81
South Carolina.....	66,056	134,072	201,260	223,150	27.28	40.56	47.08	49.97
Georgia.....	49,578	236,533	381,297	415,617	11.89	46.24	58.45	60.84
Florida.....	a14,000	39,315	92,472	95,197	a21.21	44.16	71.10	65.45
South Central Division:								
Kentucky.....	e178,457	ae276,000	399,660	a455,000	.....	.....	65.64	a71.38
Tennessee.....	a140,000	300,217	447,950	463,461	a32.00	58.21	74.05	75.00
Alabama.....	141,312	179,490	301,615	b301,615	40.36	42.60	55.83	b55.83
Mississippi.....	a117,000	236,654	334,158	334,923	a40.60	61.29	70.62	67.31
Louisiana.....	57,639	77,642	120,253	155,470	24.78	25.87	31.58	38.65
Texas.....	63,504	a220,000	466,872	553,271	21.00	a42.40	59.50	63.29
Arkansas.....	69,927	81,972	223,071	264,576	40.29	30.81	55.41	62.66
Oklahoma.....	.....	.....	.....	26,339	.....	.....	.....	57.79
North Central Division:								
Ohio.....	719,372	729,499	797,439	806,496	84.04	76.60	76.54	76.37
Indiana.....	450,057	511,283	512,955	517,459	78.64	82.39	79.21	77.75
Illinois.....	672,787	704,041	778,319	826,085	81.01	74.61	71.97	72.40
Michigan.....	292,466	362,556	427,052	455,598	79.66	78.08	73.45	75.68
Wisconsin.....	265,285	299,457	351,723	372,192	73.92	73.78	69.77	68.63
Minnesota.....	113,983	180,248	280,960	g300,333	75.92	75.87	74.59	g74.60
Iowa.....	341,938	426,657	493,267	513,614	84.44	83.52	85.51	85.58
Missouri.....	320,070	482,986	620,314	612,455	56.03	63.85	74.43	68.85
North Dakota.....	.....	.....	35,543	47,677	a59.26	f41.68	71.26	71.03
South Dakota.....	af1,660	f13,718	78,043	81,611	.....	.....	81.04	90.20
Nebraska.....	23,265	92,549	240,300	260,336	58.79	68.48	75.35	77.02
Kansas.....	89,777	231,434	399,322	389,597	74.22	73.23	88.56	87.20
Western Division:								
Montana.....	a1,657	4,270	16,980	23,550	a70.24	63.77	71.14	81.60
Wyoming.....	450	2,907	7,052	9,933	45.34	77.44	54.46	54.44
Colorado.....	4,357	22,119	65,490	77,089	42.28	69.82	72.20	69.63
New Mexico.....	a1,320	4,755	18,215	21,699	a4.42	13.32	42.25	47.13
Arizona.....	0	4,212	7,989	11,320	0	53.16	52.72	58.50
Utah.....	16,992	24,326	37,279	55,471	53.36	50.61	55.26	69.90
Nevada.....	3,106	9,045	7,387	7,514	53.97	79.73	73.80	79.58
Idaho.....	906	5,834	14,311	22,510	46.06	77.85	62.66	77.72
Washington.....	a5,000	14,780	55,964	83,979	a69.00	72.36	70.58	82.83
Oregon.....	a21,000	37,533	63,254	78,258	a67.73	75.02	74.78	76.35
California.....	91,332	158,765	221,756	232,501	63.63	73.37	77.38	75.35

a Approximately.

b Number of pupils attending 2 weeks or more.

c Number of pupils 5 to 20 years of age.

d Number of pupils 5 to 18 years of age.

e Highest number enrolled.

f Dakota Territory.

g In 1891-92.

h In 1889-90.



TABLE 4.—The common school enrollment of 1892-93, classified by sex. Per cent of the male and of the female school population enrolled.

State or Territory.	Whole number of pupils enrolled, excluding duplicates.			Number of pupils of each sex enrolled for every 100 children of such sex, 5 to 18 years of age.			Excess of pro- portion of boys (G=ex- cess of girls).
	Boys.	Girls.	Total.	Boys.	Girls.	Both sexes.	
1	2	3	4	5	6	7	8
United States.....	* 5,030,565	* 4,847,681	13,510,719	* 68.63	* 67.55	69.10	* 1.08
North Atlantic Division.....	* 752,751	* 730,987	3,228,816	* 66.59	* 65.53	69.43	* 1.06
South Atlantic Division.....	* 852,985	* 834,419	1,919,950	* 60.46	* 60.21	60.77	* 0.25
South Central Division.....	* 1,134,586	* 1,091,715	2,554,655	* 65.00	* 64.12	63.31	* 0.88
North Central Division.....	* 1,909,698	* 1,914,210	5,183,453	* 75.52	* 73.92	75.60	* 1.60
Western Division.....	* 250,085	* 276,350	623,815	* 73.68	* 72.22	73.10	* 1.46
North Atlantic Division:							
Maine.....			136,868			85.56	.....
New Hampshire <i>a</i> .....	31,736	29,967	61,703	73.73	69.77	71.75	3.96
Vermont (1891-92) <i>b</i> .....	33,993	31,321	65,314	81.98	80.38	81.22	1.60
Massachusetts.....			591,745			72.62	.....
Rhode Island.....	<i>c</i> 27,284	<i>c</i> 26,411	53,695	58.82	56.44	57.64	2.28
Connecticut.....			133,237			71.98	.....
New York.....			1,083,228			71.33	.....
New Jersey.....	125,970	123,618	249,588	59.33	58.44	58.89	0.89
Pennsylvania.....	533,768	519,670	1,053,438	67.86	67.10	67.48	0.76
South Atlantic Division:							
Delaware (1891-92).....			33,174			67.91	.....
Maryland.....			190,462			63.24	.....
District of Columbia.....	18,723	21,041	39,764	57.94	61.44	59.76	G. 3.50
Virginia.....	176,104	172,367	348,471	50.26	59.07	59.22	0.23
West Virginia.....	169,604	98,613	268,217	80.50	74.05	77.32	6.45
North Carolina.....	182,275	174,683	356,958	60.44	59.17	59.81	1.27
South Carolina.....	111,663	111,487	223,150	49.55	50.42	49.97	G. 0.87
Georgia.....	207,514	208,133	415,647	60.07	61.61	60.84	G. 1.57
Florida.....	47,102	48,095	95,197	64.53	65.33	65.45	G. 1.80
South Central Division:							
Kentucky.....	235,600	220,000	455,600	72.98	69.77	71.38	3.21
Tennessee.....	238,280	225,181	463,461	75.75	74.18	75.60	1.57
Alabama (1889-90).....			301,615			53.83	.....
Mississippi.....	167,934	166,989	334,923	66.70	68.37	67.52	G. 1.67
Louisiana.....	78,219	77,251	155,470	38.83	38.68	38.75	0.15
Texas.....	278,303	274,968	553,271	62.90	63.68	63.29	G. 0.78
Arkansas.....	137,250	127,326	264,576	64.06	61.21	62.66	2.85
Oklahoma.....			26,330			57.79	.....
North Central Division:							
Ohio.....	413,962	392,594	806,496	77.48	75.25	76.37	2.23
Indiana.....	265,693	252,366	517,459	78.66	76.52	77.75	2.44
Illinois.....	418,263	407,822	826,085	72.77	71.92	72.40	0.85
Michigan.....			455,598			75.68	.....
Wisconsin.....	188,807	183,385	372,192	69.10	68.14	68.63	0.96
Minnesota (1891-92).....			300,333			74.60	.....
Iowa.....			513,614			85.58	.....
Missouri.....	312,362	300,093	612,455	69.62	68.10	68.85	1.52
North Dakota.....	25,234	22,443	47,677	72.77	69.23	71.03	3.54
South Dakota.....	43,200	38,411	81,611	93.32	86.92	90.20	6.40
Nebraska.....	133,043	127,293	260,336	77.05	77.00	77.02	0.05
Kansas.....	159,794	189,803	389,597	87.72	86.68	87.20	1.04
Western Division:							
Montana.....			23,550			81.60	.....
Wyoming.....	5,101	4,832	9,933	54.01	54.96	54.44	G. 0.95
Colorado.....	37,614	39,445	77,089	67.23	72.08	69.63	G. 4.85
New Mexico.....	13,142	8,548	21,690	55.91	37.66	47.13	17.95
Arizona.....			11,320			53.50	.....
Utah.....	28,523	26,948	55,471	71.03	68.73	69.90	2.30
Nevada.....	3,724	3,790	7,514	77.75	81.45	79.58	G. 3.70
Idaho.....			22,510			77.72	.....
Washington.....	43,209	40,770	83,979	83.24	82.40	82.83	0.84
Oregon.....	39,664	38,594	78,258	76.58	76.10	76.35	0.48
California.....	119,078	113,423	232,501	76.33	74.32	75.35	2.01

\* This summary includes only the States belonging to the group that are tabulated below in the same column.

*a* Number of pupils attending two weeks or more.

*b* Includes only pupils 5 to 20 years of age.

*c* Approximately.

TABLE 5.—Average daily attendance of pupils at various periods and its present relation to the school population and to the enrollment.

State or Territory.	Average number of pupils in attendance each day.				Relation of the average attendance in 1892-93—	
	1870-71.	1879-80.	1889-90.	1892-93.	To the school population.	To the enrollment.
1	2	3	4	5	6	7
United States.....	4,545,317	6,144,143	8,153,635	8,855,717	<i>Per cent.</i> 45.29	<i>Per cent.</i> 65.54
North Atlantic Division.....	1,627,208	1,824,487	2,036,459	2,152,930	46.30	66.68
South Atlantic Division.....	368,111	776,798	1,126,683	1,174,634	37.18	61.17
South Central Division.....	535,632	902,767	1,467,649	1,605,920	39.80	62.86
North Central Division.....	1,911,720	2,451,167	3,188,732	3,503,670	51.10	67.60
Western Division.....	102,646	188,924	334,112	418,563	49.04	67.10
North Atlantic Division:						
Maine.....	100,392	103,115	98,364	<i>a</i> 90,393	<i>a</i> 56.52	<i>b</i> 66.00
New Hampshire.....	48,150	48,966	41,526	42,889	49.88	69.52
Vermont.....	<i>a</i> 44,100	48,006	45,887	<i>b</i> 45,057	<i>b</i> 56.04	<i>b</i> 68.98
Massachusetts.....	201,750	233,127	273,910	290,801	53.90	74.23
Rhode Island.....	22,485	27,217	33,905	35,969	38.60	66.97
Connecticut.....	62,683	73,546	83,656	86,255	46.60	64.74
New York.....	493,648	573,089	642,984	688,097	45.32	63.54
New Jersey.....	86,812	115,194	139,286	151,273	35.68	60.60
Pennsylvania.....	567,188	601,627	682,941	722,196	46.26	68.55
South Atlantic Division:						
Delaware.....	<i>a</i> 12,700	17,439	19,649	<i>ab</i> 22,693	<i>ab</i> 46.47	<i>ab</i> 68.40
Maryland.....	56,435	85,778	102,351	108,611	34.44	54.46
District of Columbia.....	16,261	20,637	28,184	30,067	45.19	75.62
Virginia.....	77,402	128,404	198,290	191,143	33.00	55.70
West Virginia.....	51,336	91,604	121,700	134,425	49.92	64.57
North Carolina.....	<i>a</i> 73,000	170,100	203,100	214,779	35.98	60.16
South Carolina.....	<i>a</i> 44,700	<i>a</i> 99,600	147,793	162,300	36.34	72.73
Georgia.....	31,377	145,190	240,791	245,378	35.92	59.03
Florida.....	<i>a</i> 10,900	27,046	64,819	62,238	42.80	65.39
South Central Division:						
Kentucky.....	120,866	178,000	225,739	<i>a</i> 261,700	<i>a</i> 40.90	<i>a</i> 57.29
Tennessee.....	<i>a</i> 89,000	208,528	323,548	330,978	53.55	71.40
Alabama.....	107,666	117,978	182,467	<i>c</i> 182,467	<i>c</i> 33.78	<i>c</i> 60.50
Mississippi.....	90,000	156,761	207,704	194,993	39.31	58.22
Louisiana.....	<i>a</i> 40,500	<i>a</i> 54,800	87,536	107,370	26.66	69.07
Texas.....	<i>a</i> 41,000	<i>a</i> 132,000	<i>a</i> 291,941	364,835	41.64	65.95
Arkansas.....	<i>a</i> 46,600	<i>a</i> 54,700	<i>a</i> 148,714	<i>a</i> 147,766	<i>a</i> 35.00	<i>b</i> 55.85
Oklahoma.....				15,811	34.68	60.01
North Central Division:						
Ohio.....	432,452	476,279	549,269	570,056	53.97	70.68
Indiana.....	295,071	321,659	342,275	371,298	55.79	71.75
Illinois.....	341,686	431,638	538,310	605,818	53.05	73.28
Michigan.....	<i>a</i> 193,000	<i>a</i> 240,000	<i>a</i> 282,000	<i>a</i> 306,162	<i>a</i> 50.85	<i>a</i> 67.19
Wisconsin.....	<i>a</i> 132,000	<i>a</i> 156,000	200,457	<i>a</i> 231,942	<i>a</i> 42.78	<i>a</i> 62.33
Minnesota.....	50,694	<i>a</i> 78,400	127,025	173,786	43.16	57.86
Iowa.....	211,562	250,836	306,300	324,217	54.02	63.13
Missouri.....	187,024	<i>a</i> 281,000	384,627	437,693	49.20	71.47
North Dakota.....		8,530	20,694	25,823	38.47	54.16
South Dakota.....	<i>a</i> 1,040		48,327	<i>a</i> 50,600	<i>a</i> 55.92	<i>a</i> 62.00
Nebraska.....	<i>a</i> 14,300	60,156	146,139	159,704	47.25	59.95
Kansas.....	52,801	137,669	243,300	246,571	55.19	63.29
Western Division:						
Montana.....	<i>a</i> 1,100	<i>a</i> 3,000	10,596	15,144	52.47	64.30
Wyoming.....	<i>a</i> 250	1,920	<i>a</i> 4,700	<i>a</i> 6,360	<i>a</i> 34.87	<i>a</i> 64.04
Colorado.....	2,611	12,618	38,715	<i>a</i> 48,211	<i>a</i> 43.54	<i>b</i> 62.54
New Mexico.....	<i>a</i> 880	3,150	<i>a</i> 13,000	14,158	30.76	65.27
Arizona.....	0	2,847	4,702	6,921	35.77	61.15
Utah.....	12,819	17,178	20,967	37,239	46.92	67.13
Nevada.....	<i>a</i> 1,800	5,401	5,064	5,192	55.00	69.12
Idaho.....	<i>a</i> 600	3,863	<i>a</i> 9,500	17,137	59.16	76.12
Washington.....	<i>a</i> 3,300	10,546	36,946	54,680	53.92	65.10
Oregon.....	<i>a</i> 15,000	27,435	43,333	55,848	54.47	71.35
California.....	64,286	100,966	146,589	157,673	51.19	67.80

*a* Approximately.*b* In 1891-92.*c* In 1889-90.

TABLE 6.—(1) *Average length of school term.* (2) *Aggregate number of days' schooling given to all pupils; the same compared with the school population and the school enrollment.*

State or Territory.	Average length of school term in days.				Aggregate number of days' schooling given.	Average number of days' schooling given for each child 5 to 18 years of age.	Average number of days attended by each pupil enrolled.
	1870-71	1879-80	1889-90	1892-93			
1	2	3	4	5	6	7	8
United States .....	132.1	130.3	134.7	136.7	1, 210, 754, 931	61.9	89.6
North Atlantic Division ...	152.0	159.2	166.6	169.7	365, 226, 295	78.6	113.1
South Atlantic Division .....	97.4	92.4	99.9	105.7	124, 176, 795	39.3	64.7
South Central Division .....	91.6	79.2	88.2	93.1	149, 499, 549	37.0	58.5
North Central Division .....	133.9	139.8	148.0	146.4	512, 809, 466	74.8	98.9
Western Division .....	119.2	129.2	135.0	141.1	59, 042, 826	69.2	94.7
North Atlantic Division:							
Maine .....	98.0	109.0	112.0	<i>a</i> 123.0	<i>b</i> 11, 118, 339	<i>b</i> 67.9	<i>b</i> 81.2
New Hampshire .....	70.0	105.3	117.7	130.2	5, 584, 148	64.9	90.5
Vermont .....	115.6	125.5	136.0	<i>a</i> 138.0	<i>a</i> 6, 215, 847	<i>a</i> 77.3	<i>a</i> 95.3
Massachusetts .....	169.0	177.0	177.0	173.0	50, 308, 573	93.3	128.4
Rhode Island .....	170.0	184.0	188.0	188.0	6, 967, 980	74.8	129.7
Connecticut .....	172.4	179.0	182.5	182.74	15, 762, 239	85.2	118.3
New York .....	176.0	178.5	186.5	183.5	123, 531, 547	81.4	114.0
New Jersey .....	178.0	192.0	192.0	190.0	28, 741, 870	67.8	115.1
Pennsylvania .....	127.2	133.4	147.6	162.0	116, 995, 752	75.0	111.1
South Atlantic Division:							
Delaware .....	132.0	158.0	166.0	<i>a b</i> 160.0	<i>a b</i> 3, 640, 881	<i>a b</i> 74.6	<i>a b</i> 109.7
Maryland .....	183.0	187.0	184.0	184.0	19, 984, 424	63.4	100.2
District of Columbia .....	200.0	193.0	178.0	175.0	5, 261, 725	79.1	132.3
Virginia .....	93.2	112.8	118.2	120.0	23, 297, 160	39.6	66.8
West Virginia .....	76.8	90.0	97.0	114.8	15, 431, 990	57.3	74.1
North Carolina .....	<i>b</i> 50.0	50.0	59.2	62.6	13, 445, 165	22.5	37.7
South Carolina .....	<i>b</i> 100.0	70.0	69.6	74.2	12, 042, 660	27.0	54.0
Georgia .....	59.0	<i>b</i> 65.0	83.0	100.0	24, 537, 800	35.9	59.0
Florida .....			<i>b</i> 120.0	<i>b</i> 105.0	<i>b</i> 6, 534, 990	<i>b</i> 44.9	<i>b</i> 68.6
South Central Division:							
Kentucky .....	<i>b</i> 110.0	102.0	94.0	<i>b</i> 107.0	<i>b</i> 28, 001, 900	<i>b</i> 43.9	<i>b</i> 61.5
Tennessee .....	<i>b</i> 77.0	68.0	86.0	86.0	28, 464, 108	46.0	61.4
Alabama .....	66.5	81.3	73.5	<i>c</i> 73.5	<i>c</i> 13, 405, 900	<i>c</i> 24.8	<i>c</i> 44.4
Mississippi .....	110.0	74.5	<i>b</i> 86.0	87.0	16, 964, 391	34.2	50.6
Louisiana .....	<i>b</i> 65.0	78.8	100.6	105.0	11, 270, 063	28.1	72.5
Texas .....	<i>b</i> 140.0	71.7	100.0	107.4	<i>b</i> 39, 183, 279	<i>b</i> 44.8	<i>b</i> 70.8
Arkansas .....			<i>b</i> 75.0	73.0	10, 786, 918	25.6	40.8
Oklahoma .....				<i>a b</i> 90.0	<i>b</i> 1, 422, 990	<i>b</i> 31.2	<i>b</i> 54.0
North Central Division:							
Ohio .....	165.0	152.0	166.5	165.3	94, 230, 257	89.2	116.8
Indiana .....	98.5	136.0	130.0	133.0	49, 382, 634	74.2	95.4
Illinois .....	146.7	150.0	155.4	155.41	94, 153, 076	82.4	113.9
Michigan .....	140.0	150.0	156.0	156.0	<i>b</i> 47, 761, 272	<i>b</i> 79.3	<i>b</i> 104.8
Wisconsin .....	155.0	165.0	158.6	<i>c</i> 158.6	<i>b</i> 36, 714, 631	<i>b</i> 67.7	<i>b</i> 98.7
Minnesota .....	<i>b</i> 83.0	94.0	128.0	<i>a</i> 155.2	<i>b</i> 26, 971, 587	<i>b</i> 67.0	<i>b</i> 89.8
Iowa .....	130.0	148.0	156.0	156.0	50, 577, 852	84.3	98.5
Missouri .....	90.0	<i>b</i> 104.0	129.4	119.3	52, 208, 332	58.7	85.3
North Dakota .....			113.0	<i>a</i> 117.0	<i>b</i> 3, 021, 291	<i>b</i> 45.0	<i>b</i> 63.4
South Dakota .....	<i>b</i> 75.0	<i>b</i> 96.0	145.0	<i>a</i> 100.7	<i>b</i> 5, 095, 420	<i>b</i> 56.3	<i>b</i> 62.4
Nebraska .....	72.0	82.0	140.0	130.0	20, 762, 170	61.4	79.8
Kansas .....	116.0	120.0	135.0	129.5	31, 930, 944	71.5	82.0
Western Division:							
Montana .....	<i>b</i> 80.0	96.0	142.7	<i>a</i> 148.0	<i>b</i> 2, 241, 312	<i>b</i> 77.7	<i>b</i> 95.2
Wyoming .....	<i>b</i> 200.0	119.0	<i>b</i> 120.0	<i>b</i> 139.4	<i>b</i> 886, 129	<i>b</i> 48.6	<i>b</i> 89.2
Colorado .....	92.0	<i>b</i> 132.0	144.4	170.0	<i>b</i> 8, 195, 870	<i>b</i> 74.0	<i>b</i> 106.3
New Mexico .....	<i>b</i> 111.0	111.0	<i>b</i> 67.0	113.3	1, 604, 101	34.8	74.0
Arizona .....		109.0	126.0	195.0	1, 349, 595	69.8	119.2
Utah .....	152.0	128.0	133.0	<i>a</i> 153.0	5, 697, 567	71.8	102.7
Nevada .....	142.0	143.0	140.0	<i>a</i> 154.4	<i>b</i> 801, 645	<i>b</i> 84.9	<i>b</i> 106.7
Idaho .....	<i>b</i> 45.0	94.0	<i>b</i> 69.8	<i>a</i> 86.4	<i>b</i> 1, 480, 636	<i>b</i> 51.1	<i>b</i> 65.8
Washington .....	<i>b</i> 80.0	<i>b</i> 91.0	97.2	101.5	5, 550, 020	54.7	66.1
Oregon .....	<i>b</i> 90.0	90.0	118.2	107.0	5, 975, 736	58.3	76.3
California .....	123.0	146.6	157.6	160.2	25, 260, 215	81.8	108.6

*a* In 1891-92.*b* Approximately.*c* In 1889-90.



TABLE 7.—Number and sex of teachers. Per cent of male teachers.

State or Territory.	Whole number of different teachers employed.			Per cent of male teachers.			
	Males.	Females.	Total.	1870-71	1879-80	1889-90	1892-93
1	2	3	4	5	6	7	8
United States .....	122,056	260,954	383,010	41.0	42.8	34.5	31.9
North Atlantic Division .....	17,555	77,433	94,988	26.2	28.8	29.0	18.5
South Atlantic Division .....	19,400	23,475	42,875	63.8	62.5	49.1	45.2
South Central Division .....	29,738	23,627	53,415	67.5	67.2	57.5	55.8
North Central Division .....	49,462	122,618	172,080	43.2	41.7	32.4	28.7
Western Division .....	5,851	13,801	19,652	45.1	40.3	31.1	29.8
North Atlantic Division:							
Maine .....	<i>a</i> 51,116	<i>a</i> 66,570	<i>a</i> 7,686	<i>b</i> 24.4	<i>b</i> 27.2	<i>b</i> 16.0	<i>a b</i> 14.5
New Hampshire .....	283	2,842	3,125	15.0	16.8	9.8	9.1
Vermont .....	<i>a</i> 538	<i>a</i> 3,813	<i>a</i> 4,351	16.5	16.8	12.0	<i>a</i> 12.4
Massachusetts .....	989	10,244	11,233	12.7	13.2	9.8	8.8
Rhode Island .....	162	1,358	1,520	<i>b</i> 20.4	20.2	12.6	10.7
Connecticut .....	<i>b</i> 417	<i>b</i> 3,349	<i>b</i> 3,766	<i>b</i> 22.1	<i>b</i> 22.8	<i>b</i> 13.4	<i>b</i> 11.1
New York .....	5,068	27,403	32,476	22.9	26.0	16.9	15.6
New Jersey .....	737	4,131	4,868	32.5	28.5	18.4	15.1
Pennsylvania .....	8,245	17,718	25,963	42.8	45.5	34.2	31.8
South Atlantic Division:							
Delaware .....	<i>a</i> 218	<i>a</i> 622	<i>a</i> 840	<i>b</i> 29.9	<i>b</i> 46.6	<i>b</i> 31.0	<i>a</i> 26.0
Maryland .....	1,019	3,190	4,209	45.0	42.6	27.8	24.2
District of Columbia .....	112	783	895	<i>b</i> 8.2	7.8	13.0	12.5
Virginia .....	2,961	4,971	7,932	64.5	61.8	41.5	37.3
West Virginia .....	3,458	2,478	5,936	79.0	75.2	65.4	58.2
North Carolina .....	3,921	3,110	7,031	<i>b</i> 73.2	<i>b</i> 71.3	59.1	55.8
South Carolina .....	2,114	2,421	4,535	62.4	59.5	49.6	46.0
Georgia .....	4,436	4,383	8,819	71.4	<i>b</i> 65.2	53.3	50.3
Florida .....	1,161	1,517	2,678	<i>b</i> 65.7	61.6	48.0	43.3
South Central Division:							
Kentucky .....	<i>b</i> 4,515	<i>b</i> 4,047	<i>b</i> 8,562	<i>b</i> 66.0	64.6	49.8	<i>b</i> 52.7
Tennessee .....	5,146	3,666	8,812	<i>b</i> 75.0	74.4	61.8	58.4
Alabama .....	<i>c</i> 4,168	<i>c</i> 2,440	<i>c</i> 6,608	66.8	63.8	62.9	<i>c</i> 63.1
Mississippi .....	3,654	3,843	7,497	<i>b</i> 60.8	61.2	49.6	48.7
Louisiana .....	1,299	1,945	3,244	50.9	46.1	44.7	40.0
Texas .....	6,367	5,539	11,906	<i>b</i> 77.3	<i>b</i> 75.0	61.1	53.5
Arkansas .....	4,434	1,880	6,314	<i>b</i> 75.6	78.4	68.5	70.2
Oklahoma .....	<i>a</i> 205	<i>a</i> 267	<i>a</i> 472				<i>a</i> 43.4
North Central Division:							
Ohio .....	10,464	15,048	25,512	43.2	47.8	43.1	41.0
Indiana .....	6,523	7,024	13,547	60.5	57.5	51.1	48.2
Illinois .....	6,553	17,687	24,240	43.5	39.7	32.5	27.0
Michigan .....	3,300	13,005	16,305	26.3	29.2	22.3	20.2
Wisconsin .....	2,202	10,248	12,450	<i>b</i> 28.8	28.9	19.8	17.7
Minnesota .....	1,678	7,262	8,940	33.7	35.9	23.9	18.8
Iowa .....	4,837	23,464	28,301	39.0	33.6	20.6	17.1
Missouri .....	5,497	8,439	13,936	65.3	58.1	44.4	39.4
North Dakota .....	814	1,904	2,718	<i>b</i> 24.7	40.8	28.3	29.9
South Dakota .....	1,225	3,482	4,707				
Nebraska .....	2,133	7,221	9,354	51.9	40.7	27.1	22.8
Kansas .....	4,236	7,834	12,070	47.2	45.1	40.8	35.1
Western Division:							
Montana .....	190	573	763	<i>b</i> 60.3	38.5	22.9	24.9
Wyoming .....	96	328	424	<i>b</i> 28.6	44.3	22.4	22.6
Colorado .....	<i>b</i> 688	<i>b</i> 2,207	2,895	48.8	36.4	26.2	<i>b</i> 23.8
New Mexico .....	368	179	547	<i>b</i> 91.7	78.0	<i>b</i> 62.2	67.3
Arizona .....	87	196	283		47.5	38.8	30.7
Utah .....	427	587	1,014	55.0	54.5	46.6	42.1
Nevada .....	44	233	277	32.4	46.7	16.3	15.9
Idaho .....	260	390	650	<i>b</i> 64.3	57.4	<i>b</i> 33.4	40.0
Washington .....	1,072	2,014	3,086	<i>b</i> 46.5	37.4	40.6	34.7
Oregon .....	1,385	2,192	3,577	<i>b</i> 51.7	48.3	43.3	38.7
California .....	1,234	4,902	6,136	40.0	23.6	21.4	20.1

*a* In 1891-92.*b* Approximately.*c* In 1890-91.



TABLE 8.—*Teachers' salaries.*

State or Territory.	Average monthly salaries of teachers.	
	Males.	Females.
1	2	3
United States.....	*\$46.59	*\$38.46
North Atlantic Division.....	59.75	40.25
South Atlantic Division.....	*32.33	*31.95
South Central Division.....	*39.44	*33.65
North Central Division.....	*46.18	*37.16
Western Division.....	*65.31	*54.37
North Atlantic Division:		
Maine (1891-92).....	43.95	25.02
New Hampshire.....	43.83	27.00
Vermont (1891-92).....	33.40	24.80
Massachusetts.....	140.73	43.13
Rhode Island.....	96.29	49.44
Connecticut.....	85.48	40.64
New York.....	<i>a</i> 69.70	<i>a</i> 47.50
New Jersey.....	79.99	47.73
Pennsylvania.....	43.94	33.04
South Atlantic Division:		
Delaware (1889-90).....	36.60	34.08
Maryland.....	<i>a</i> 56.60	<i>a</i> 44.55
District of Columbia (1891-92).....	<i>a</i> 110.70	<i>a</i> 68.40
Virginia.....	33.06	27.49
West Virginia.....		
North Carolina.....	23.34	22.61
South Carolina (1891-92).....	28.05	23.92
Georgia.....		
Florida.....		
South Central Division:		
Kentucky.....	<i>b</i> 36.29	<i>b</i> 29.65
Tennessee.....	<i>a</i> 33.45	<i>a</i> 27.82
Alabama.....		
Mississippi.....	27.37	26.60
Louisiana.....	34.50	31.32
Texas.....	56.71	46.43
Arkansas.....	36.27	32.80
Oklahoma (1891-92).....	34.20	32.90
North Central Division:		
Ohio.....	41.94	36.47
Indiana.....	46.00	40.20
Illinois.....	60.90	47.07
Michigan.....	43.89	34.36
Wisconsin.....		
Minnesota (1891-92).....	43.28	34.58
Iowa.....	33.73	30.81
Missouri.....	44.11	41.30
North Dakota.....	44.75	39.03
South Dakota.....	38.00	33.00
Nebraska.....	47.59	38.06
Kansas.....	43.91	35.41
Western Division:		
Montana.....	85.00	64.00
Wyoming.....	69.59	49.93
Colorado.....	73.03	49.50
New Mexico.....		
Arizona.....	87.50	72.50
Utah (1891-92).....	66.83	42.71
Nevada.....	101.95	63.73
Idaho.....		
Washington.....	52.27	45.49
Oregon.....	51.11	41.74
California.....	81.54	65.29

\* This summary includes only the States of the group that are tabulated in the same column below.

*a* Approximately.*b* Excluding cities.

TABLE 9. — *Schoolhouses and value of school property.*

State or Territory.	Whole number of school-houses.	School property.		
		Value of all public school property.	Value per building.	Value per capita of average attendance.
1	2	3	4	5
United States .....	235,426	\$298,435,039	\$1,692	\$45.00
North Atlantic Division.....	46,683	153,332,672	3,285	71.22
South Atlantic Division.....	34,700	18,083,761	521	15.40
South Central Division.....	42,760	19,663,955	459	12.25
North Central Division.....	100,208	173,155,739	1,728	49.42
Western Division.....	11,075	34,198,912	3,088	81.70
North Atlantic Division:				
Maine.....	4,401	3,768,998	856	41.69
New Hampshire.....	2,047	3,081,406	1,506	71.85
Vermont.....	<i>a</i> 2,524	<i>c</i> 1,500,000	<i>c</i> 594	<i>c</i> 33.29
Massachusetts.....	<i>a</i> 7,510	30,913,840	<i>d</i> 4,117	106.32
Rhode Island.....	500	3,592,565	7,185	99.88
Connecticut.....	1,635	7,508,536	4,592	87.04
New York.....	12,015	49,913,605	4,155	72.52
New Jersey.....	1,725	10,374,218	6,014	68.60
Pennsylvania.....	14,326	42,679,504	2,975	59.10
South Atlantic Division:				
Delaware (1891-92).....	<i>a</i> 497	904,426	<i>d</i> 1,820	39.85
Maryland.....	2,312	<i>c</i> 3,810,000	<i>c</i> 1,648	<i>c</i> 35.03
District of Columbia.....	107	<i>c</i> 2,765,000	<i>c</i> 25,840	<i>c</i> 91.96
Virginia.....	6,636	2,763,585	416	14.23
West Virginia.....	5,284	3,547,815	671	26.31
North Carolina.....	6,238	<i>b</i> 892,364	<i>b</i> 143	<i>b</i> 4.16
South Carolina.....	3,518	617,571	176	3.81
Georgia.....	<i>a</i> 7,740	<i>c</i> 2,133,000	<i>c</i> 276	<i>c</i> 8.69
Florida.....	2,368	650,000	275	10.44
South Central Division:				
Kentucky.....	7,700	4,822,000	626	18.50
Tennessee.....	6,817	2,950,004	433	8.91
Alabama.....	<i>a</i> 6,495	<i>c</i> 1,120,000	<i>c</i> 172	<i>c</i> 6.14
Mississippi.....	<i>a</i> 5,590	1,511,069	<i>d</i> 270	<i>c</i> 7.74
Louisiana.....	<i>a</i> 2,645	<i>c</i> 832,000	<i>c</i> 315	<i>c</i> 7.75
Texas.....	8,380	6,128,882	732	16.80
Arkansas.....	4,875	1,875,000	385	12.69
Oklahoma.....	<i>b</i> 258	425,000	1,647	26.88
North Central Division:				
Ohio.....	12,991	36,505,281	2,811	64.04
Indiana.....	9,737	16,777,504	1,723	45.19
Illinois.....	12,454	32,356,846	2,598	53.40
Michigan.....	7,690	15,757,921	2,049	51.47
Wisconsin (1891-92).....	6,570	10,224,926	1,556	44.09
Minnesota.....	6,143	10,158,637	1,653	58.45
Iowa.....	13,433	15,571,588	1,159	48.03
Missouri.....	9,660	11,570,415	1,198	26.43
North Dakota.....	1,178	<i>b</i> 2,423,286	<i>b</i> 1,363	<i>b</i> 93.84
South Dakota.....	<i>b</i> 3,253	2,596,779	798	51.31
Nebraska.....	6,499	8,212,556	1,264	51.42
Kansas.....	10,000	11,000,000	1,100	44.62
Western Division:				
Montana.....	408	1,547,632	3,793	102.20
Wyoming.....	247	380,474	1,540	59.81
Colorado.....	<i>b</i> 1,375	5,861,018	<i>b</i> 4,254	<i>b</i> 121.60
New Mexico.....	<i>a</i> 519	<i>c</i> 215,000	<i>c</i> 414	<i>c</i> 15.18
Arizona.....	133	419,700	3,155	60.63
Utah.....	<i>a</i> 893	1,973,103	<i>d</i> 2,210	52.99
Nevada.....	193	<i>b</i> 292,214	1,514	56.27
Idaho.....	520	614,210	1,181	35.84
Washington.....	1,654	4,872,711	2,946	89.10
Oregon.....	1,787	2,649,080	1,482	47.42
California.....	3,343	15,373,770	4,599	97.52

*a* Number of schools.*b* In 1891-92.*c* Approximately.*d* Average value per school.

TABLE 10.—*Public secondary education.—Private schools.*

State or Territory.	Public secondary education.			Private schools. (a)		
	Number of pupils in public high schools, or studying secondary branches. (b)	Per cent of the whole public school enrollment.	Same percentage in 1889-90.	Number of pupils in private schools.	Total number of pupils in both public and private schools.	Per cent of pupils in private schools.
1	2	3	4	5	6	7
United States.....				1,336,600	14,847,319	9.00
North Atlantic Division.....				e 527,900	3,756,716	e 14.05
South Atlantic Division.....				e 136,700	2,056,680	e 6.65
South Central Division.....				e 175,300	2,729,955	e 6.43
North Central Division.....				e 442,700	5,626,153	e 7.88
Western Division.....				e 54,000	677,815	e 7.96
North Atlantic Division:						
Maine.....	d 15,884	d 11.62	10.95			
New Hampshire.....	e 7,165	11.61	11.84	8,254	69,957	11.80
Vermont.....	d 2,425	d 3.71	3.71	d 7,857	d 73,171	d 10.74
Massachusetts.....	28,582	7.30	6.82	62,350	454,095	13.73
Rhode Island.....	2,023	3.77	3.32	13,660	67,355	20.28
Connecticut.....				20,981	154,218	13.60
New York.....				170,901	1,254,129	13.63
New Jersey.....				49,167	298,765	16.46
Pennsylvania.....						
South Atlantic Division:						
Delaware.....						
Maryland.....	5,303	2.66	2.43			
District of Columbia.....	2,236	5.62	4.79			
Virginia.....	e 7,769	2.23	2.67			
West Virginia.....						
North Carolina.....				d 26,198	d 361,566	d 7.22
South Carolina.....	e 9,605	4.30	3.58			
Georgia.....				27,285	442,932	6.16
Florida.....						
South Central Division:						
Kentucky.....				d 15,000	d 404,860	d 3.70
Tennessee.....	f 20,391	4.40		d 45,428	d 532,935	d 8.53
Alabama.....						
Mississippi.....				22,859	357,782	6.39
Louisiana.....						
Texas.....	g 37,758	7.15	6.89			
Arkansas.....						
Oklahoma.....						
North Central Division:						
Ohio.....	40,171	4.98	4.58			
Indiana.....						
Illinois.....	23,281	2.82	2.25	121,050	947,135	12.78
Michigan.....				41,717	497,315	8.39
Wisconsin.....	12,275	3.30	3.01			
Minnesota.....	h 4,290	1.43	1.30			
Iowa.....				27,454	541,068	5.07
Missouri.....				d 23,181	d 663,980	d 3.49
North Dakota.....						
South Dakota.....				1,879	83,490	2.25
Nebraska.....	7,324	2.81	2.57			
Kansas.....						
Western Division:						
Montana.....				d 1,014	d 22,782	d 4.45
Wyoming.....						
Colorado.....	3,081	4.00	2.65	3,813	80,902	4.71
New Mexico.....				2,849	24,539	11.61
Arizona.....	60	0.53				
Utah.....				d 10,934	d 66,382	d 16.47
Nevada.....						
Idaho.....						
Washington.....	3,704	4.41	4.52	3,398	87,377	3.89
Oregon.....	2,500	3.19		5,178	83,436	6.20
California.....	6,354	2.73	1.60	22,164	254,665	8.71

a Of elementary and secondary grades.

b Included in Tables 3 and 4.

c Estimate for all the States of the division.

d In 1891-92.

e Number studying the "higher branches."

f Number studying either algebra or physiology

g Number studying either algebra or geometry.

h Includes only high schools under State supervision.



TABLE 11.—Receipts of school moneys.

State or Territory.	Income from permanent funds and rent of school lands.	From taxation.			From all other sources.	Total receipts, excluding sales of bonds and balance on hand.
		From State taxes.	From local taxes.	Total raised by taxation.		
1	2	3	4	5	6	7
United States.....	\$8, 674, 945	\$33, 694, 813	\$108, 425, 054	\$142, 119, 867	\$14, 228, 070	\$165, 022, 882
North Atlantic Division.....	1, 005, 039	11, 953, 796	38, 270, 584	50, 224, 380	5, 098, 403	56, 327, 822
South Atlantic Division.....	436, 426	4, 376, 119	4, 577, 866	8, 953, 985	674, 851	10, 065, 263
South Central Division.....	1, 540, 737	6, 815, 991	3, 269, 240	10, 085, 231	1, 044, 706	12, 670, 674
North Central Division.....	4, 985, 097	7, 489, 999	54, 310, 394	61, 800, 393	6, 069, 645	72, 855, 135
Western Division.....	707, 646	3, 058, 908	7, 996, 970	11, 055, 878	1, 340, 465	13, 103, 989
North Atlantic Division:						
Maine (1891-92).....	a 98, 845	421, 219	903, 607	1, 324, 826	0	1, 423, 671
New Hampshire.....	16, 730	79, 136	701, 068	780, 204	63, 325	860, 259
Vermont (1891-92).....	a 68, 359	89, 030	540, 634	629, 664	29, 759	727, 782
Massachusetts.....	192, 733	0	9, 468, 436	9, 468, 436	2, 738	9, 063, 907
Rhode Island.....	17, 514	110, 424	953, 538	1, 063, 962	b 152, 316	1, 233, 792
Connecticut.....	168, 839	251, 713	1, 577, 787	1, 829, 500	147, 888	2, 146, 227
New York.....	224, 359	3, 771, 667	12, 884, 903	16, 656, 570	2, 271, 361	19, 222, 280
New Jersey.....	147, 660	2, 251, 700	1, 460, 007	3, 711, 707	7, 820	3, 867, 197
Pennsylvania.....	0	4, 978, 907	9, 780, 604	14, 759, 511	2, 423, 196	17, 182, 707
South Atlantic Division:						
Delaware (1889-90) a.....	60, 000	c 6, 000	209, 000	215, 000	0	275, 000
Maryland.....	55, 591	587, 087	1, 185, 029	1, 772, 116	305, 137	2, 132, 844
District of Columbia.....	0	d 426, 904	426, 904	853, 808	0	853, 808
Virginia.....	43, 152	931, 968	796, 131	1, 728, 099	36, 095	1, 807, 346
West Virginia (1891-92).....	a 30, 331	a 317, 316	1, 040, 083	1, 357, 399	122, 364	1, 510, 094
North Carolina (1891-92).....	0	638, 835	b 36, 588	675, 423	125, 027	800, 450
South Carolina (1891-92).....	0	454, 976	57, 322	512, 298	7, 614	519, 912
Georgia.....	212, 046	919, 364	e 429, 325	1, 349, 325	57, 527	1, 618, 888
Florida.....	35, 306	93, 669	396, 848	490, 517	21, 087	546, 910
South Central Division:						
Kentucky (a).....	144, 636	f 1, 462, 208	f 897, 311	2, 359, 519	150, 000	2, 654, 155
Tennessee.....	124, 684	1, 240, 931	(g)	1, 240, 931	250, 839	1, 616, 654
Alabama (1889-90).....	143, 958	465, 729	a 290, 000	755, 729	115	899, 782
Mississippi.....	79, 592	921, 500	228, 103	1, 149, 603	163, 732	1, 392, 627
Louisiana.....	46, 076	275, 223	418, 769	693, 992	231, 877	971, 945
Texas (1891-92).....	a 997, 000	a 1, 992, 172	632, 191	2, 624, 363	224, 148	3, 845, 511
Arkansas.....	0	454, 509	764, 347	1, 218, 856	15, 655	1, 234, 511
Oklahoma (1891-92).....	4, 611	d 3, 719	38, 519	42, 238	8, 340	55, 189
North Central Division:						
Ohio.....	238, 256	1, 715, 158	9, 439, 381	11, 154, 539	656, 730	12, 049, 525
Indiana (1891-92).....	635, 327	1, 638, 548	2, 872, 173	4, 510, 721	463, 607	5, 609, 655
Illinois.....	631, 216	1, 056, 937	12, 717, 415	13, 774, 352	912, 951	15, 348, 519
Michigan.....	311, 578	686, 117	4, 589, 005	5, 275, 122	432, 981	6, 019, 681
Wisconsin.....	197, 878	655, 101	3, 717, 582	4, 372, 683	576, 207	5, 146, 768
Minnesota.....	1, 017, 534	694, 828	2, 781, 535	3, 476, 363	303, 960	4, 797, 857
Iowa.....	229, 508	0	6, 578, 532	6, 578, 532	b 923, 434	7, 731, 944
Missouri.....	719, 386	703, 258	3, 731, 875	4, 435, 133	443, 422	5, 577, 471
North Dakota (1891-92).....	33, 966	190, 760	570, 514	761, 274	34, 295	834, 475
South Dakota (1891-92).....	a 75, 649	0	1, 502, 484	1, 502, 484	39, 078	1, 617, 211
Nebraska.....	561, 019	149, 292	2, 269, 898	2, 419, 190	877, 965	3, 858, 174
Kansas.....	a 328, 840	0	3, 540, 000	3, 540, 000	a 375, 015	4, 243, 855
Western Division:						
Montana.....	3, 209	0	414, 617	414, 617	188, 529	606, 355
Wyoming.....	0	0	172, 052	172, 052	14, 898	186, 950
Colorado (1891-92).....	108, 463	0	1, 462, 109	1, 462, 109	753, 182	2, 323, 754
New Mexico.....	0	0	140, 100	140, 100	62, 215	202, 315
Arizona.....	6, 573	178, 164	49, 375	227, 539	111	234, 223
Utah.....	(h)	348, 576	436, 144	784, 720	68, 356	853, 076
Nevada (1891-92).....	79, 412	15, 081	104, 765	120, 446	247	200, 105
Idaho (1891-92).....	15, 000	0	260, 785	260, 785	6, 655	282, 449
Washington.....	84, 475	0	1, 546, 312	1, 546, 312	39, 114	1, 669, 901
Oregon.....	175, 505	0	1, 005, 812	1, 005, 812	139, 998	1, 321, 315
California.....	a 235, 000	a 2, 516, 487	2, 404, 899	4, 921, 386	67, 160	5, 223, 546

a Approximately.

b Includes receipts from sale of bonds.

c State appropriation for colored schools.

d From United States.

e Includes balance on hand.

f Average for two years.

g Not reported; a part is included in other sources.

h Included in other sources.



TABLE 12.—The school revenue compared (1) with the adult male population (taxpayers), and (2) with the school population. Percentage analysis of the school revenue.

State or Territory.	Amount raised per taxpayer.					Amount raised per capita of the school population (5 to 18 years).	Per cent of the total revenue derived from—			
	From permanent funds and rents.	From State taxes.	From local taxes.	From other sources.	Total raised per taxpayer.		Permanent funds and rents.	State taxes.	Local taxes.	Other sources.
1	2	3	4	5	6	7	8	9	10	11
United States.....	\$0.48	\$1.88	\$0.05	\$0.80	\$0.21	\$8.45	5.3	20.4	65.7	8.6
North Atlantic Division...	.19	2.25	7.21	.96	10.61	12.11	1.8	21.2	67.9	9.1
South Atlantic Division...	.21	2.07	2.17	.31	4.76	3.19	4.3	43.5	45.5	6.7
South Central Division...	.58	2.55	1.22	.39	4.74	3.14	12.2	53.8	25.8	8.2
North Central Division...	.77	1.15	8.37	.94	11.23	10.62	6.8	10.3	74.6	8.3
Western Division.....	.53	2.28	5.96	1.00	9.77	15.35	5.4	23.3	61.0	10.3
North Atlantic Division:										
Maine (1891-92).....	a .49	2.10	4.52	.00	7.11	8.80	a 6.9	29.6	63.5	.0
New Hampshire.....	.14	.65	5.79	.52	7.10	10.00	1.9	9.2	81.5	7.4
Vermont (1891-92).....	a .69	.89	5.42	.30	7.30	9.05	a 9.4	12.2	74.3	4.1
Massachusetts.....	.28	.00	13.51	.....	13.79	17.91	2.0	.0	98.0	.....
Rhode Island.....	.16	1.00	8.62	b 1.37	11.15	13.24	1.4	9.0	77.3	b 12.3
Connecticut.....	.72	1.06	6.68	.63	9.09	11.59	7.9	11.7	73.5	6.9
New York.....	.16	2.07	7.07	1.24	10.54	12.66	1.5	19.6	67.0	11.9
New Jersey.....	.32	4.33	3.13	.02	8.30	9.12	3.8	58.2	37.8	.2
Pennsylvania.....	.00	3.20	6.29	1.56	11.05	11.01	.0	29.0	56.9	14.1
South Atlantic Division:										
Delaware (1889-90) a ..	1.26	c .13	4.39	.00	5.78	5.79	21.8	c 2.2	76.0	.0
Maryland.....	.20	d 2.10	4.24	1.09	7.63	6.77	2.6	d 27.6	55.5	14.3
District of Columbia...	.00	5.82	5.82	.00	11.64	12.83	.0	50.0	50.0	.0
Virginia.....	.11	2.37	2.02	.09	4.59	3.07	2.4	51.6	44.0	2.0
West Virginia (1891-92)	a .16	a 1.69	5.52	.65	8.02	5.67	a 2.0	a 21.0	68.9	8.1
North Carolina (1891-92)	.00	1.83	a .10	.36	2.29	1.37	.0	79.8	a 4.6	15.6
South Carolina (1891-92)	.00	1.88	.24	.02	2.14	1.18	.0	87.5	11.0	1.5
Georgia.....	.51	2.21	c 1.03	.13	3.88	2.37	13.1	56.8	e 26.6	3.5
Florida.....	.33	.87	3.69	.19	5.03	3.76	6.5	17.1	72.6	3.8
South Central Division:										
Kentucky a ..	.30	f 3.07	f 1.88	.32	5.57	4.16	5.4	f 55.1	f 33.8	5.7
Tennessee.....	.30	3.02	(g)	.61	3.93	2.62	7.7	76.8	(g)	15.5
Alabama (1889-90).....	.44	1.43	a .89	.01	2.77	1.67	16.0	51.8	a 32.2	.....
Mississippi.....	.28	3.24	.80	.53	4.90	2.81	5.7	66.1	16.4	11.8
Louisiana.....	.17	1.04	1.59	.83	3.68	2.42	4.7	28.3	42.1	23.9
Texas (1891-92).....	a 1.73	a 3.47	1.10	.39	6.69	4.57	a 25.9	a 51.8	16.4	5.9
Arkansas.....	.00	1.68	2.83	.06	4.57	2.92	.0	36.8	61.9	1.3
Oklahoma (1891-92).....	.15	.12	1.23	.27	1.77	1.81	8.4	6.7	63.8	15.1
North Central Division:										
Ohio.....	.23	1.66	9.16	.64	11.69	11.41	2.0	14.3	78.3	5.4
Indiana (1891-92).....	1.06	2.73	4.79	.77	9.35	8.59	11.3	29.2	51.2	8.3
Illinois.....	.56	.93	11.23	.83	13.55	13.44	4.1	6.9	82.9	6.1
Michigan.....	.49	1.07	7.18	.68	9.42	10.00	5.2	11.4	76.2	7.2
Wisconsin.....	.40	1.32	7.48	1.16	10.36	9.49	3.8	12.7	72.2	11.3
Minnesota.....	2.45	1.67	6.69	.73	11.54	11.52	21.2	14.5	58.0	6.3
Iowa.....	.42	.00	12.15	b 1.71	14.28	12.88	3.0	.0	85.1	b 11.9
Missouri.....	.96	.93	4.95	.59	7.43	6.29	12.8	12.6	66.7	7.9
North Dakota (1891-92)...	.52	2.53	7.58	.46	11.09	12.43	4.7	22.9	68.4	4.0
South Dakota (1891-92)...	a .77	.00	15.21	.40	16.38	16.45	a 4.7	.0	92.9	2.4
Nebraska.....	1.76	.47	7.10	2.74	12.07	11.41	14.5	3.9	58.8	22.8
Kansas.....	a .87	.00	9.32	a .99	11.18	9.50	a 7.7	.0	83.4	a 8.9
Western Division:										
Montana.....	.04	.00	5.24	2.39	7.67	21.50	.5	.0	68.4	31.1
Wyoming.....	.00	.00	4.52	.39	4.91	10.25	.0	.0	92.0	8.0
Colorado (1891-92).....	.59	.00	7.95	4.09	12.63	22.88	4.7	.0	62.9	32.4
New Mexico.....	.00	.00	2.92	1.30	4.22	4.40	.0	.0	69.2	30.8
Arizona.....	.22	5.89	1.63	.....	7.74	12.11	2.8	76.1	21.1	.....
Utah.....	(h)	5.44	6.81	1.06	13.31	10.75	(h)	40.9	51.1	8.0
Nevada (1891-92).....	3.92	.77	5.17	.02	9.88	20.68	39.7	7.8	52.4	.1
Idaho (1891-92).....	.39	.00	6.83	.17	7.39	10.20	5.3	.0	92.3	2.4
Washington.....	.42	.00	8.23	.24	8.89	16.47	5.1	.0	92.6	2.3
Oregon.....	1.30	.00	7.43	1.03	9.76	12.69	13.3	.0	76.1	10.6
California.....	a .47	a 5.03	4.81	.13	10.44	16.93	a 4.5	a 48.2	46.0	1.3

a Approximately.

b Includes receipts from sale of bonds.

c State appropriation for colored schools.

d From United States.

e Includes balance on hand.

f Average for two years.

g Not reported; a part is included in "other sources." Included in "other sources."

TABLE 13.—Progress of school expenditure.

State or Territory.	Total expenditure for common schools.				Expended per capita of population.			
	1870-71.	1879-80.	1889-90.	1892-93.	1870-71.	1879-80.	1889-90.	1892-93.
1	2	3	4	5	6	7	8	9
United States.....	\$69, 107, 612	\$78, 094, 687	\$140, 506, 715	\$163, 343, 278	\$1.75	\$1.56	\$2.24	\$2.47
North Atlantic Division.	29, 796, 835	28, 538, 058	48, 023, 492	55, 596, 903	2.38	1.97	2.76	3.04
South Atlantic Division.	3, 781, 581	5, 130, 492	8, 778, 165	10, 035, 993	.63	.68	.99	1.08
South Central Division..	4, 854, 834	4, 872, 829	10, 667, 680	12, 213, 490	.73	.55	.97	1.05
North Central Division..	28, 430, 033	35, 285, 635	62, 823, 563	71, 660, 910	2.14	2.03	2.81	3.07
Western Division.....	2, 244, 329	4, 267, 673	10, 213, 815	13, 835, 982	2.15	2.41	3.37	3.94
North Atlantic Division:								
Maine.....	950, 662	1, 067, 991	1, 327, 553	c1, 393, 833	1.51	1.65	2.01	c2.12
New Hampshire.....	418, 545	565, 339	844, 333	866, 777	1.30	1.63	2.24	2.25
Vermont.....	489, 961	446, 217	711, 072	c738, 058	1.51	1.34	2.14	c2.26
Massachusetts.....	5, 579, 363	4, 983, 900	8, 286, 062	9, 663, 907	3.73	2.80	3.70	4.10
Rhode Island.....	461, 160	526, 112	884, 966	1, 150, 929	2.05	1.90	2.56	3.01
Connecticut.....	1, 496, 981	1, 408, 375	2, 157, 014	2, 376, 635	2.74	2.26	2.89	3.02
New York.....	9, 607, 904	10, 296, 977	17, 543, 880	19, 161, 684	2.17	2.03	2.92	3.10
New Jersey.....	2, 302, 341	1, 873, 465	3, 340, 190	3, 834, 103	2.48	1.66	2.31	2.35
Pennsylvania.....	8, 479, 918	7, 369, 682	12, 928, 422	16, 410, 977	2.36	1.72	2.46	2.93
South Atlantic Division:								
Delaware.....	153, 509	207, 281	a275, 000	ab275, 000	1.21	1.41	1.63	ab1.63
Maryland.....	1, 214, 729	1, 544, 367	1, 910, 663	2, 247, 111	1.53	1.65	1.83	2.08
District of Columbia.	373, 535	438, 567	905, 777	853, 808	2.77	2.47	3.93	3.26
Virginia.....	587, 472	946, 169	1, 604, 509	1, 798, 158	.47	.63	.97	1.04
West Virginia.....	577, 719	707, 553	1, 198, 493	c1, 408, 065	1.26	1.14	1.57	c1.78
North Carolina.....	177, 498	376, 062	714, 900	790, 320	1.16	.27	.44	.47
South Carolina.....	275, 688	324, 629	450, 936	483, 180	.38	.33	.39	.40
Georgia.....	292, 000	471, 029	1, 190, 354	1, 631, 221	.24	.31	.65	.85
Florida.....	129, 431	114, 895	516, 533	549, 130	.66	.43	1.32	1.25
South Central Division:								
Kentucky.....	a1, 075, 000	1, 069, 030	2, 140, 678	a2, 385, 000	.80	.65	1.15	a1.23
Tennessee.....	a758, 000	744, 180	1, 526, 241	1, 647, 799	.59	.48	.86	.91
Alabama.....	a370, 000	a500, 000	a890, 000	ab890, 000	.36	.40	a.59	ab.59
Mississippi.....	950, 000	830, 705	1, 109, 575	1, 192, 844	1.11	.73	.86	.88
Louisiana.....	531, 834	411, 858	817, 110	992, 000	.71	.41	.73	.84
Texas.....	a650, 000	a1, 030, 000	3, 178, 300	a3, 925, 000	.74	.65	1.42	a1.58
Arkansas.....	a520, 000	287, 056	1, 016, 776	1, 109, 092	1.02	.36	.90	.94
Oklahoma.....				c71, 755				c.71
North Central Division:								
Ohio.....	6, 831, 035	7, 166, 963	10, 602, 238	12, 180, 794	2.52	2.24	2.89	3.27
Indiana.....	a2, 897, 537	4, 491, 850	5, 245, 218	c5, 609, 655	1.70	2.27	2.39	c2.54
Illinois.....	6, 656, 542	7, 014, 092	11, 645, 126	14, 296, 375	2.57	2.28	3.04	3.54
Michigan.....	2, 840, 740	2, 775, 917	5, 349, 366	6, 062, 647	2.33	1.70	2.55	2.80
Wisconsin.....	1, 932, 539	2, 177, 023	3, 801, 212	4, 678, 689	1.79	1.65	2.25	2.53
Minnesota.....	960, 558	1, 328, 429	4, 187, 310	4, 692, 891	2.06	1.70	3.22	3.26
Iowa.....	3, 269, 190	4, 484, 043	6, 382, 953	7, 551, 483	2.70	2.76	3.34	3.80
Missouri.....	1, 749, 049	2, 675, 364	5, 434, 262	5, 705, 110	.99	1.23	2.03	2.00
North Dakota.....			626, 948	1, 008, 901			3.43	4.10
South Dakota.....	a23, 090	245, 000	1, 199, 630	c1, 380, 727	1.29	1.81	3.65	c4.11
Nebraska.....	365, 520	1, 108, 617	3, 376, 332	4, 243, 638	2.61	2.45	3.19	3.78
Kansas.....	904, 323	1, 818, 337	4, 972, 967	4, 250, 000	2.24	1.83	3.48	3.01
Western Division:								
Montana.....	a35, 606	78, 730	364, 084	657, 800	1.62	2.01	2.76	4.12
Wyoming.....	a7, 000	28, 504	225, 000	194, 662	.71	1.37	3.71	2.28
Colorado.....	67, 395	395, 227	1, 681, 379	c1, 981, 635	1.44	2.03	4.08	ca3.31
New Mexico.....	a4, 900	28, 973	a85, 000	182, 559	.05	.24	.55	1.11
Arizona.....	0	61, 172	181, 914	216, 779	0	1.51	3.05	2.85
Utah.....	a117, 000	132, 194	394, 685	1, 313, 319	1.28	.92	1.90	5.37
Nevada.....	a85, 000	220, 245	161, 481	210, 689	1.93	3.54	3.53	4.88
Idaho.....	19, 003	38, 411	169, 020	c232, 278	1.17	1.18	2.00	c2.27
Washington.....	a35, 000	112, 615	958, 111	1, 914, 959	1.30	1.50	2.74	4.29
Oregon.....	a160, 000	307, 031	805, 979	1, 221, 615	1.65	1.76	2.57	3.21
California.....	1, 713, 431	2, 864, 571	5, 187, 162	5, 709, 687	2.93	3.31	4.29	4.35

a Approximately.

b In 1889-90

c In 1891-92.

TABLE 11.—*School expenditure.*

State or Territory.	Sites, build- ings, furni- ture, libra- ries, and apparatus.	Salaries of teachers and superintend- ents.	Other expenses.	Total expend- iture, ex- cluding pay- ment of bonded debt.
1	2	3	4	5
United States.....	\$31, 439, 580	\$104, 090, 607	\$27, 813, 091	\$163, 343, 273
North Atlantic Division.....	11, 533, 721	33, 267, 419	10, 795, 763	55, 596, 903
South Atlantic Division.....	1, 110, 885	7, 825, 245	1, 099, 863	10, 035, 993
South Central Division.....	1, 392, 408	9, 877, 393	943, 689	12, 213, 490
North Central Division.....	12, 932, 291	44, 941, 476	13, 787, 143	71, 660, 910
Western Division.....	4, 470, 275	8, 179, 074	1, 186, 633	13, 835, 982
North Atlantic Division:				
Maine (1891-92).....	62, 302	a 857, 244	474, 287	1, 393, 833
New Hampshire.....	101, 051	579, 571	186, 155	866, 777
Vermont (1891-92).....	104, 403	558, 719	74, 936	738, 058
Massachusetts.....	1, 791, 112	a 5, 997, 190	1, 875, 605	9, 663, 907
Rhode Island.....	286, 141	700, 092	164, 696	1, 150, 929
Connecticut.....	373, 188	1, 520, 661	482, 786	2, 376, 635
New York.....	4, 579, 128	12, 073, 595	2, 508, 961	19, 161, 684
New Jersey.....	667, 293	2, 511, 910	654, 900	3, 834, 103
Pennsylvania.....	3, 569, 103	8, 468, 437	b 4, 373, 437	b 16, 410, 977
South Atlantic Division:				
Delaware (1889-90) a.....	c 23, 795	225, 000	26, 205	275, 000
Maryland.....	285, 137	1, 667, 570	294, 404	2, 247, 111
District of Columbia.....	68, 240	619, 605	165, 963	853, 808
Virginia.....	194, 006	1, 416, 106	188, 046	1, 798, 158
West Virginia (1891-92).....	276, 391	885, 731	245, 943	1, 408, 065
North Carolina.....	63, 091	628, 268	98, 961	790, 320
South Carolina.....	9, 018	444, 992	29, 170	483, 180
Georgia.....	d 147, 949	1, 472, 278	10, 994	1, 631, 221
Florida.....	43, 258	465, 695	40, 177	549, 130
South Central Division:				
Kentucky a.....	330, 000	1, 960, 000	95, 000	2, 385, 000
Tennessee.....	186, 801	1, 340, 446	120, 552	1, 647, 799
Alabama (1889-90) a.....	150, 000	660, 000	80, 000	890, 000
Mississippi.....	16, 858	1, 009, 387	166, 599	1, 192, 844
Louisiana.....	80, 342	681, 744	229, 914	992, 000
Texas a.....	500, 000	3, 225, 000	200, 000	3, 925, 000
Arkansas.....	110, 407	952, 561	48, 124	1, 109, 092
Oklahoma (1891-92) a.....	18, 000	48, 255	5, 500	71, 755
North Central Division:				
Ohio.....	1, 582, 455	7, 700, 763	2, 897, 576	12, 180, 794
Indiana (1891-92).....	895, 220	3, 835, 919	878, 516	5, 609, 655
Illinois.....	3, 304, 714	8, 561, 529	2, 430, 132	14, 296, 375
Michigan.....	923, 583	3, 758, 787	1, 380, 277	6, 062, 647
Wisconsin.....	866, 796	2, 992, 346	819, 547	4, 678, 689
Minnesota.....	1, 468, 928	2, 806, 405	417, 558	4, 692, 891
Iowa.....	1, 237, 419	4, 789, 323	1, 524, 741	7, 551, 483
Missouri.....	1, 172, 776	3, 697, 139	835, 195	5, 705, 110
North Dakota.....	261, 092	566, 360	181, 449	1, 008, 901
South Dakota (1891-92).....	a 277, 720	686, 427	a 416, 580	1, 380, 727
Nebraska.....	591, 588	2, 446, 478	1, 205, 572	4, 243, 638
Kansas.....	350, 000	3, 100, 000	800, 000	4, 250, 000
Western Division:				
Montana.....	264, 481	352, 983	40, 336	657, 800
Wyoming.....	32, 455	137, 232	24, 975	194, 662
Colorado (1891-92).....	659, 562	985, 137	336, 936	1, 981, 635
New Mexico.....	42, 989	111, 241	28, 329	182, 559
Arizona.....	42, 514	139, 993	34, 272	216, 779
Utah.....	744, 385	440, 765	128, 169	1, 313, 319
Nevada.....	22, 193	162, 352	26, 144	210, 689
Idaho (1891-92).....	53, 255	162, 731	16, 292	232, 278
Washington.....	536, 830	881, 048	497, 081	1, 914, 959
Oregon.....	417, 812	749, 704	54, 099	1, 221, 615
California.....	1, 653, 799	4, 055, 888	0	5, 709, 687

a Approximately.

b Includes redemption of bonds.

c Includes city of Wilmington only.

d Includes some current expenses in cities.



TABLE 15.—(1) *Expenditure per pupil*; (2) *percentage analysis of expenditure*; (3) *monthly expenditure per pupil*.

State or Territory.	Average expenditure per pupil (for the whole school year).				Per cent of total expend- iture devoted to—			Average monthly ex- penditure per pupil.	
	For sites, build- ings, etc.	For sala- ries.	For other pur- poses.	Total.	Sites, build- ings, etc.	Sala- ries.	Other pur- poses.	For sala- ries.	For all pur- poses.
1	2	3	4	5	6	7	8	9	10
United States .....	\$3.55	\$11.76	\$3.14	\$18.45	<i>Per ct.</i> 19.2	<i>Per ct.</i> 63.7	<i>Per ct.</i> 17.1	\$1.72	\$2.70
North Atlantic Division...	5.36	15.45	5.01	25.82	20.7	59.8	19.5	1.82	3.04
South Atlantic Division...	.95	6.66	.94	8.55	11.1	78.0	10.9	1.26	1.62
South Central Division...	.87	6.15	.59	7.61	11.4	80.9	7.7	1.32	1.63
North Central Division...	3.69	12.83	3.94	20.46	18.0	62.7	19.3	1.75	2.80
Western Division .....	10.68	19.54	2.84	33.06	32.3	59.1	8.6	2.77	4.69
North Atlantic Division:									
Maine (1891-92) .....	.69	<i>a</i> 9.50	5.26	15.45	4.5	<i>a</i> 61.5	34.0	<i>a</i> 1.55	2.51
New Hampshire .....	2.36	13.51	4.34	20.21	11.7	66.9	21.4	2.08	3.10
Vermont (1891-92) .....	2.32	12.40	1.66	16.38	14.1	75.7	10.2	1.80	2.37
Massachusetts .....	6.16	<i>a</i> 20.62	6.46	33.24	18.5	<i>a</i> 62.1	19.4	<i>a</i> 2.38	3.84
Rhode Island .....	7.96	19.47	4.58	32.01	24.9	60.8	14.3	2.01	3.30
Connecticut .....	4.33	17.63	5.60	27.56	15.7	64.0	20.3	1.93	3.02
New York .....	6.65	17.54	3.65	27.84	23.9	63.0	13.1	1.95	3.10
New Jersey .....	4.42	16.61	4.33	25.36	17.4	65.5	17.1	1.75	2.67
Pennsylvania .....	4.94	11.73	<i>b</i> 6.06	<i>b</i> 22.73	21.7	51.6	<i>b</i> 26.7	1.45	<i>b</i> 2.80
South Atlantic Division:									
Delaware (1889-90) <i>a</i> .....	<i>c</i> 1.21	11.45	1.33	13.99	<i>c</i> 8.7	81.8	9.5	1.33	1.67
Maryland .....	2.63	15.36	2.71	20.70	12.7	74.2	13.1	1.67	2.25
District of Columbia .....	2.27	20.60	5.52	28.39	8.0	72.6	19.4	2.36	3.25
Virginia .....	1.00	7.29	.97	9.26	10.8	78.8	10.4	1.22	1.54
West Virginia (1891-92) .....	2.16	6.92	1.92	11.00	19.6	62.9	17.5	1.26	2.00
North Carolina .....	.29	2.93	.46	3.68	8.0	79.5	12.5	.93	1.18
South Carolina .....	.66	2.74	.18	2.98	1.9	92.1	6.0	.74	.80
Georgia .....	<i>d</i> 6.00	6.00	.04	6.04	<i>d</i> 9.1	90.3	0.6	1.20	1.33
Florida .....	.69	7.48	.65	8.82	7.9	84.8	7.3	1.43	1.68
South Central Division:									
Kentucky <i>a</i> .....	1.27	7.52	.36	9.15	13.8	82.2	4.0	1.40	1.70
Tennessee .....	.56	4.05	.36	4.97	11.3	81.3	7.4	.94	1.16
Alabama (1889-90) <i>a</i> .....	.82	3.62	.44	4.88	16.9	74.1	9.0	.98	1.33
Mississippi .....	.09	5.18	.85	6.12	1.4	84.6	14.0	1.19	1.41
Louisiana .....	.75	6.35	2.14	9.24	8.1	68.7	23.2	1.21	1.76
Texas <i>a</i> .....	1.37	8.84	.55	10.76	12.7	82.2	5.1	1.65	2.00
Arkansas .....	.75	6.45	.31	7.51	10.0	85.9	4.1	1.77	2.06
Oklahoma (1891-92) <i>a</i> .....	2.40	6.43	.73	9.56	25.1	67.2	7.7	1.43	2.12
North Central Division:									
Ohio .....	2.78	13.51	5.08	21.37	13.0	63.2	23.8	1.63	2.58
Indiana (1891-92) .....	2.48	10.64	2.44	15.56	16.0	68.4	15.6	1.61	2.36
Illinois .....	5.45	14.13	4.01	23.59	23.1	59.9	17.0	1.82	3.04
Michigan .....	3.02	12.28	4.51	19.81	15.2	62.0	22.8	1.57	2.54
Wisconsin .....	3.74	12.90	3.53	20.17	18.5	64.0	17.5	1.63	2.55
Minnesota .....	8.45	16.15	2.40	27.00	31.3	59.8	8.9	2.08	3.48
Iowa .....	3.82	14.77	4.70	23.29	16.4	63.4	20.2	1.89	2.98
Missouri .....	2.68	8.44	1.91	13.03	20.6	64.8	14.6	1.42	2.19
North Dakota .....	10.11	21.93	7.03	39.07	25.9	56.1	18.0	3.75	6.68
South Dakota (1891-92) .....	<i>a</i> 6.05	14.97	<i>a</i> 9.08	30.10	<i>a</i> 20.1	49.7	<i>a</i> 30.2	2.97	5.98
Nebraska .....	3.70	15.32	7.55	26.57	13.9	57.6	28.5	2.36	4.09
Kansas .....	1.42	12.57	3.25	17.24	8.2	73.0	18.8	1.94	2.66
Western Division:									
Montana .....	17.47	23.31	2.66	43.44	40.2	53.7	6.1	3.15	5.87
Wyoming .....	5.10	21.58	3.93	30.61	16.7	70.5	12.8	3.10	4.39
Colorado (1891-92) .....	13.76	20.55	7.03	41.34	33.3	49.7	17.0	2.74	5.51
New Mexico .....	3.04	7.86	2.00	12.90	23.6	60.9	15.5	1.39	2.23
Arizona .....	6.14	20.22	4.95	31.31	19.6	64.6	15.8	2.07	3.21
Utah .....	19.89	11.84	3.44	35.27	56.7	33.6	9.7	1.55	4.61
Nevada .....	4.27	31.27	5.04	40.58	10.5	77.1	12.4	4.05	5.26
Idaho (1891-92) .....	4.83	14.77	1.48	21.08	22.9	70.1	7.0	3.42	4.83
Washington .....	9.82	16.11	9.09	35.02	28.0	46.0	26.0	3.17	6.90
Oregon .....	7.48	13.42	.97	21.87	34.2	61.4	4.4	2.51	4.09
California .....	10.49	25.73	0	36.22	29.0	71.0	0	3.21	4.52

*a* Approximately.*b* Includes redemption of bonds.*c* Includes city of Wilmington only.*d* Includes some current expenses in cities.



## III.—CITY SCHOOL SYSTEM.

NOTE.—For statistics of individual cities, see Part IV, Tables 1-3.

The two facts which are the most striking of those disclosed by the statistical summaries of city school systems are, (1) that the average length of the school term has still further decreased, and (2) the great increase, both relative and absolute, in the cost of the schools.

The decrease in the length of term is less than that noted last year, being only nine-tenths of a day. This difference is but a slight one, and may or may not be a further indication of a growing belief that a shorter school year is advisable, as was suggested in the last report. But if this explanation is not the true one, the difference must be ascribed to increasing laxity in the matter of holidays, due to a feeling that the closing of the schools occasionally for a day is not a very serious matter. This is certainly true of many cases, and there are indications that they have been sufficiently numerous to account for the decrease that appears in the general average.

In any case of doubt, the final test of the true meaning of statistical changes is to search out the locality from which the differences come and investigate the conditions that prevail there. Upon these conditions must be based any lessons that are to be drawn from the statistics, for the tables themselves are merely the dials upon which are shown the effects of causes that are in operation behind them.

Proceeding upon this idea in the present instance, it is discovered (see Table 4) that the average length of the school term has decreased one day in the North Atlantic Division; 0.44 day in the South Atlantic, and 1.3 days in the South Central, and 3 days in the Western. On the other hand, there has been an increase of 1.6 days in the North Central Division, which counterbalances much of the decrease in the other divisions, and leaves the loss in the general average at 0.9 of a day.

On account of its great preponderance in the number of pupils over the western and the two southern divisions, it is to the North Atlantic Division that we must look for the causes that affect the general average most. New York and Massachusetts are the two States which have had the greatest influence in the decrease.

The following shows the length of school year for 1891-92 and 1892-93 in the cities of New York which had over 25,000 inhabitants in 1890:

Cities.	Length of school term.		Decrease or increase.
	1891-92.	1892-93.	
	<i>Days.</i>	<i>Days.</i>	<i>Days.</i>
Albany.....	191	185	D.. 6
Auburn.....	188	188	.....
Binghamton.....	195	195	.....
Brooklyn.....	202	198	D.. 4
Buffalo.....	195	192.8	D.. 2.2
Elmira.....	196	196	.....
Long Island City.....	197	194	D.. 3
New York City.....	198	192	D.. 6
Rochester.....	196	195	D.. 1
Syracuse.....	195	195	.....
Troy.....	178	188	I.. 10
Utica.....	192	190	D.. 2
Yonkers.....	192	189	D.. 3

It appears, therefore, that there were fewer school days in eight cities, including the largest in the State; that in four the term was the same in both years, and in only one there was an increase. In New York City the schools were in session 202.5 days in 1890-91.

In Massachusetts the reports of length of term directly show a shortening in 13 cities, namely: Amesbury, 10 days; Chicopee, 2 days; Clinton, 6 days; Framingham, 2 days; Hyde Park, 10 days; Lawrence, 1 day; Lowell, 9 days; Medford, 10 days; New Bedford, 7 days; Newton, 9 days; Quincy, 26 days. Eleven cities report a longer term, namely: Gloucester, 2 days; Haverhill, 2 days; Holyoke,  $\frac{1}{2}$  day; Lynn, 4 days; Marlboro, 5 days; Melrose, 7 days; Newburyport, 2 days; Pittsfield, 5 days; Worcester, 4 days; Woburn, 1 day; North Adams, 5 days. The remaining 18 cities report the same term in both years, or else fail to report the item.

The reports to the State superintendent vary in some instances from the returns made to this office, and the table below shows the figures which appear in the Massachusetts State reports:

Town or city.	Length of school term.		Decrease or increase.
	1891-92.	1892-93.	
	<i>Mos. days.</i>	<i>Mos. days.</i>	<i>Days.</i>
Adams .....	9 7	9 6	D.. 1
Amesbury .....	9 15	9 15	.....
Beverly .....	10 0	10 0	.....
Boston .....	10 0	9 17	D.. 3
Brockton .....	10 0	10 0	.....
Brookfield .....	9 1	7 17	D.. 24
Cambridge .....	10 0	10 0	.....
Chelsea .....	10 0	10 0	.....
Chicopee .....	9 12	9 10	D.. 2
Clinton .....	9 13	9 8	D.. 5
Everett .....	9 16	10 0	I.. 4
Fall River .....	9 10	10 0	I.. 10
Fitchburg .....	9 10	9 13	I.. 3
Framingham .....	9 10	8 16	D.. 14
Gloucester .....	9 10	9 14	I.. 4
Haverhill .....	9 3	9 15	I.. 12
Holyoke .....	9 6	9 13	I.. 7
Hyde Park .....	10 0	9 18	D.. 2
Lawrence .....	10 0	10 0	.....
Lowell .....	9 14	9 3	D.. 11
Lynn .....	9 12	9 12	.....
Malden .....	9 10	9 9	D.. 1
Marlboro .....	9 0	8 19	D.. 1
Medford .....	9 12	9 5	D.. 7
Melrose .....	10 0	9 15	D.. 5
Natick .....	9 2	9 5	I.. 3
New Bedford .....	9 17	9 10	D.. 7
Newburyport .....	10 0	10 7	I.. 7
Newton .....	10 0	10 0	.....
North Adams .....	9 3	9 9	I.. 6
Northampton .....	9 10	9 10	.....
Peabody .....	10 0	10 0	.....
Pittsfield .....	10 0	10 0	.....
Quincy .....	9 15	8 9	D.. 26
Salem .....	8 17	9 12	I.. 15
Somerville .....	10 0	10 0	.....
Springfield .....	10 0	10 0	.....
Taunton .....	9 10	9 10	.....
Waltham .....	9 12	9 1	D.. 11
Weymouth .....	9 16	9 11	D.. 5
Woburn .....	10 0	9 8	D.. 2
Worcester .....	10 0	9 4	D.. 16

If each of the differences in the fourth column be weighted according to the corresponding average attendance, a net loss to all the cities of 2.15 days is indicated. But the figures of this office in regard to attendance indicate a loss of 4.7 days. This is probably the more nearly correct, for many superintendents report every year as the length of term the number of days which the regulations prescribe, without deducting extraordinary holidays.

The following shows the term of the principal cities in the two southern and western divisions, in all three of which, as wholes, a reduction appears:

*Length of school term.*

SOUTH ATLANTIC DIVISION.

	1891-92.	1892-93.
	<i>Days.</i>	<i>Days.</i>
Baltimore, Md.....	203	201
Washington, D. C.....	185	175
Wilmington, Del.....	195	195
Richmond, Va.....	177	183
Atlanta, Ga.....	195	180
Charleston, S. C.....	193	192

SOUTH CENTRAL DIVISION.

Louisville, Ky.....	201	201
Memphis, Tenn.....	175	180
Nashville, Tenn.....	185	187
New Orleans, La.....	187	180

WESTERN DIVISION.

Los Angeles, Cal.....	173	171
San Francisco, Cal.....	205	203
Denver, Colo.:		
District No. 1.....	190	181
District No. 2.....	182	181
District No. 17.....	184	180
Portland, Oreg.....	190	190
Salt Lake City, Utah.....	180	177

The figures presented tend to show in what way the decreased length of term came about. It appears to have been not the result of a well considered plan, but of a custom that is becoming only too common, of closing the schools for any one of a great variety of reasons. There are cases, to be sure, where lack of funds necessitates the premature closing of the schools, and there are also other cases in which a long school term is shortened from a well-defined belief that such a course is best for the pupil. But the small number of days by which the decrease comes is against the supposition that either class of causes is chiefly responsible for the loss.

Comparatively few school officers refer to this matter and it is not possible to give the precise cause that is operative in any other than those few cases. The following, however, are significant:



Mr. Isaac A. Sheppard, president of the board of education of Philadelphia, Pa., says, in his report for 1893:

Parents have frequently complained that too many holidays are given; and such complaints appear to be well founded. Nominally our schools are open ten months in the year, for five days per week; but, in fact, the schools are not opened until the second week in September, and are closed about a week before the close of June. Deducting, moreover, the legal holidays, the Christmas holidays, the Easter holidays, and the time lost for rainy days, cold days, hot days, and days when some other excuse is found for taking rest, we find that the actual days of school work amount to less than nine months, instead of ten. It is true that both teachers and children like holidays, and plenty of them, but is it well for the children, is it well for the parents, is it well for the taxpayer that valuable time should be thus wasted? I believe that the interests of the community would be better served by keeping the schools open not less than two hundred days in the year.

The report of Mr. Gordon A. Southworth, superintendent of schools, Somerville, Mass., for the year 1893, contains the following:

Nominally our school year contains forty weeks. In 1893 the schools were in session thirty-seven weeks lacking a half day. This loss of  $7\frac{1}{2}$  per cent of the time was occasioned as follows: School holidays, twelve half days; stormy weather, eight half days; last half week in June, five half days; Thanksgiving recess, three half days; Middlesex County Teachers' Association, two half days; ex-Mayor Pope's funeral, one half day. Total, thirty-one half days.

A similar condition exists in Wilmington, Del., as is shown by the following extract from the report for 1893-94 of Superintendent D. W. Harlan:

One hundred and eighty-nine is somewhat more than the average number of days the schools were open. The number of days of school in each school each month can be seen in the tables in the Appendix. Labor day, two days for a teachers' institute, the Friday following Thanksgiving Day, were voted holidays, and by an old custom the schools were closed the last Wednesday in June instead of the last Friday. The last eight school days of June the grammar and primary schools were closed at noon, making only a half day each day, or four days of school in the eight days. At examination time, if the teacher of a room has one class under examination and the other class is out of school, the day is counted as a day of school in that division, but if neither class is in school, there is no school in that division, and the reports show there has been no school, or ought to do so. This only occurs when so many examination papers have accumulated in the hands of a teacher that the day is needed to mark them.

#### EXPENDITURES.

A grievous fact in connection with the modern improvements in the school system is that they cost money. Handsome buildings, effective ventilation, manual training, scientific laboratories, kindergartens, physical training, and compulsory attendance are all costly. They require not only expenditure for new material appliances, but a greater number of teachers, janitors, and other employees, and frequently, much higher priced ones. A steady increase is therefore observable in the aggregate of expenditures for schools.

While the enrollment in the cities under consideration increased 4.86 per cent during the year, the increase in total expense was 8.96 per



cent. For teaching and supervision the increase was 6.63 per cent. By divisions these items of increase were as follows:

Division.	Enrollment in public schools.	Cost of teach- ing and supervision.	Expenditure for all purposes.
North Atlantic:			
1891-92 .....	1,335,698	\$17,330,426	\$30,065,635
1892-93 .....	1,377,808	18,104,963	31,678,701
Increase.....	41,810	773,537	1,613,066
Per cent.....	3.13	4.47	5.36
South Atlantic:			
1891-92 .....	212,952	\$2,268,220	\$3,537,554
1892-93 .....	218,872	2,497,697	3,475,077
Increase.....	5,920	229,477	(a)
Per cent.....	2.78	10.12	(b)
South Central:			
1891-92 .....	151,325	\$1,637,110	\$2,300,369
1892-93 .....	164,057	1,884,400	2,579,273
Increase.....	12,732	247,290	278,904
Per cent.....	8.41	15.10	12.13
North Central:			
1891-92 .....	897,167	\$11,673,823	\$20,057,510
1892-93 .....	959,591	12,600,751	22,980,728
Increase.....	62,424	926,928	2,923,218
Per cent.....	6.96	7.94	14.57
Western:			
1891-92 .....	145,988	\$2,462,907	\$4,594,052
1892-93 .....	156,538	2,630,027	5,267,009
Increase.....	10,550	167,120	673,557
Per cent.....	7.22	6.74	14.66
a Decrease, 62,477.			
b Per cent of decrease, 1.77.			

From this it appears that in the North Atlantic and North Central divisions the increase has been in both the amount paid to teachers and in the sums spent for other purposes. In the South Atlantic Division more has been spent for tuition, but there has been a saving in other respects, so that the whole amount spent was actually less in 1892-93 than in 1891-92. In the South Central Division there appears a heavier increase in the cost of tuition than in the total expense, showing that the teachers received the lion's share of the 12 per cent increase in the whole amount spent. In the Western Division, on the contrary, the total expenditure shows a heavy increase, while the amount paid to teachers has increased at a less rate than the enrollment. In the South Atlantic Division there was but a small increase in enrollment during the year—much less than in any other division. This itself would explain why the expense should not have increased in the same ratio as in the other divisions, but as it happens there was not only no increase but an absolute decrease of \$62,477.

The expenditures for the two years of the principal cities in this division were as follows:

*Total expenditures.*

Cities.	1891-92.	1892-93.
Baltimore, Md.....	\$1,176,484	\$1,121,033
Washington, D. C.....	964,070	860,245
Wilmington, Del.....	154,211	151,533
Richmond, Va.....	145,377	155,095
Atlanta, Ga.....	139,460	152,778
Charleston, S. C.....	61,854	78,558

It will be seen that the decrease of the division is due principally to the conditions in Baltimore, Washington, and Wilmington. Baltimore spent for building \$96,000 more in 1892 than in 1893, and \$20,000 more for current expenses other than teachers' salaries. In Washington the expenditure for sites and buildings was \$220,344 in 1891-92, and only \$42,270 in 1892-93. In Wilmington there was a reduction of \$5,000 in the amount paid for buildings, and \$10,000 in the current expenses. In all three cities more was paid to teachers in the later year than in the earlier.

The unusual increases noted in the North, Central, and Western divisions come from unwonted energy in the erection of new buildings. Chicago expended \$1,370,000 for that purpose during 1892-93, against \$995,000 in 1891-92, and \$749,000 in 1890-91. St. Louis spent \$565,000 last year, and only \$109,038 in 1890-91. Omaha, Nebr., invested \$255,000 in sites and buildings in 1892-93, or over twice as much as in the year previous. Salt Lake City, Utah, however, surpasses them all, for with a school attendance of less than 6,000, nearly \$360,000 was expended for permanent improvements, thus more than doubling the value of the school property of the city in a single year.

Expenditures like these are the best possible evidence of the favor with which the American people regard the public schools. The complacent attitude of school officers and boards of education toward the tendency to heavy expenditures is exemplified in the following extracts:

Superintendent A. P. Marble, Worcester, Mass. (Report of the Worcester Schools, 1893, p. 28), says:

The cost per scholar in the day schools has risen from \$24.52 last year to \$26.28 in 1893. This increase of \$1.76 in the cost per scholar is due partly to changes in the course of studies, which require cabinets of specimens in natural history, etc., more apparatus and books of reference, and a large amount of supplementary reading; in part it is due to the improved means of heating and ventilation, which require much more fuel; and in part it is due to the overcrowded condition of some of the school-houses, where four teachers are required to do the work which three might do in suitable rooms. In the two high schools the cost per pupil has arisen from \$47.25 in the old and crowded school to \$66.90. This increase is due first to the smaller and more reasonable number of pupils to a teacher; and secondly, it is due to the extensive purchase of books and apparatus. The equipment of these schools is now elaborate and first class, if not unsurpassed.

Hon. Z. L. White, president of the board of education, Columbus, Ohio (Annual Report of the Board of Education of the City of Columbus, Ohio, for the school year ending August 31, 1893, p. 29), says:

An article in the Evening Dispatch of recent date charges this board with extravagance, affirming that this is the most expensive branch of the public service, costing more to maintain it than it costs to conduct the balance of the city government. This proposition is quite new and we think the statement will admit of investigation, but, granting that it is true, why should it not be the most expensive? The education given in our public schools constitutes the capital and the stock in trade of three-fourths of our boys and girls, who are thereby equipped for business. They in turn become good citizens, help to build up and enrich the city, so the grade of scholarship given them should be as high as the city can afford.

But let us see about this expense.

The item of tuition costs now only \$1.92 per capita more than it did twelve years ago, when our teachers were poorly paid, and a lower rate of scholarship given. During the transition from 1880 to 1892 there has been a gradual advance in the wages of the teachers, and in the course of study, with the very small advance of 13 per cent in the cost of administration. Is there any extravagance in this? The department of penmanship and calisthenics was also added during this period. The library building is cited as a monument of our extravagance. The fact is, we have here the choicest piece of property owned by the city, the most beautiful front and inside finish, and the best adapted to the uses for which it was designed. This department had grown to such proportions that a home, with fire-proof vaults for the records, contracts, and valuable papers, with assembly room, committee rooms, offices, reference rooms, and library hall was indispensable to the successful management of the department. This home, including the lot and the improvements to the buildings, cost \$80,000, and because it was built so beautifully and substantially for the money, it stands a monument to economy—a credit to the building committee, to this board, and to the city.

TABLE 1.—*Summary of statistics of school systems of cities containing over 8,000 inhabitants, showing increase or decrease from previous year.*

[NOTE.—No correct list of cities of a given population can be made in other than census years. The percentages of increase shown below, therefore, are relative only and are intended to be used for no other purpose than comparison with each other.]

Enrollment:

1891-92 .....	2, 743, 430
1892-93 .....	2, 876, 866
Increase .....	133, 436
Per cent of increase .....	4. 86

Aggregate number of days' attendance of pupils:

1891-92 .....	378, 389, 408
1892-93 .....	394, 017, 038
Increase .....	15, 627, 630
Per cent of increase .....	4. 13

Average daily attendance:

1891-92 .....	1, 977, 442
1892-93 .....	2, 066, 850
Increase .....	89, 408
Per cent of increase .....	4. 52



## Average length (in days) of school term:

1891-92 .....	191.5
1892-93 .....	190.6

Decrease .....	0.9
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## Enrollment in private schools (estimated):

1891-92 .....	753, 178
1892-93 .....	775, 910

Increase .....	22, 732
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Per cent of increase .....	3.02
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## Number of supervising officers:

1891-92 .....	2, 724
1892-93 .....	2, 894

Increase .....	170
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Per cent of increase .....	6.24
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## Number of teachers:

1891-92 .....	55, 057
1892-93 .....	58, 522

Increase .....	3, 465
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Per cent of increase .....	6.29
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## Number of buildings:

1891-92 .....	6, 757
1892-93 .....	6, 957

Increase .....	200
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Per cent of increase .....	2.96
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## Number of sittings or seats:

1891-92 .....	2, 501, 694
1892-93 .....	2, 693, 522

Increase .....	181, 828
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Per cent of increase .....	7.27
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## Value of school property:

1891-92 .....	\$193, 607, 787
1892-93 .....	205, 338, 077

Increase .....	11, 730, 290
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Per cent of increase .....	6.06
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## Expenditure for teaching and supervision:

1891-92 .....	\$35, 372, 482
1892-93 .....	37, 717, 838

Increase .....	2, 345, 356
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Per cent of increase .....	6.63
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## Expenditure for all purposes, excepting loans and bonds:

1891-92 .....	\$60, 555, 120
1892-93 .....	65, 981, 388

Increase .....	5, 426, 268
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Per cent of increase .....	8.96
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TABLE 2.—Summary by States of enrollment, attendance, supervising officers, and teachers in cities containing over 8,000 inhabitants. (a)

Cities of—	Number of school systems.	Enrollment in public day schools.	Aggregate number of days' attendance of all pupils.	Average daily attendance.	Enrollment in private and parochial schools (estimated).	Number of supervising officers.	Number of teachers.		
							Male.	Female.	Total.
1	2	3	4	5	6	7	8	9	10
United States ...	473	2,876,866	394,017,038	2,066,850	775,910	2,894	4,298	54,224	58,522
N. Atlantic Division ...	195	1,377,808	190,042,037	981,290	358,624	1,385	1,931	26,549	28,480
S. Atlantic Division ...	38	218,872	28,840,197	154,789	49,901	166	440	3,928	4,368
S. Central Division ...	41	164,057	21,967,115	119,229	47,631	138	361	2,727	3,088
N. Central Division ...	173	959,591	132,268,316	702,158	295,681	985	1,542	18,200	19,542
Western Division ...	26	156,538	20,899,373	109,384	24,073	220	224	2,820	3,044
N. Atlantic Division:									
Maine .....	8	20,364	2,756,341	15,538	4,729	22	38	512	550
New Hampshire ...	5	11,691	1,459,079	8,421	6,580	18	21	257	278
Vermont .....	2	3,689	438,706	2,438	1,788	6	4	72	76
Massachusetts ...	42	260,187	37,665,611	195,420	47,163	198	583	5,318	5,901
Rhode Island ...	6	35,698	4,166,558	22,239	8,271	47	40	702	742
Connecticut ...	14	62,832	8,624,281	43,390	13,646	86	96	1,250	1,346
New York ...	50	538,439	72,985,977	376,942	162,772	636	568	10,222	10,790
New Jersey ...	21	122,053	16,023,818	80,700	35,020	155	75	2,134	2,209
Pennsylvania ...	47	322,855	45,921,666	236,202	78,655	217	506	6,082	6,583
S. Atlantic Division:									
Delaware .....	1	9,622	1,346,085	6,903	.....	2	6	196	202
Maryland .....	4	75,983	9,763,364	49,062	19,791	34	147	1,395	1,542
District of Columbia .....	2	39,764	5,261,725	30,067	68,500	42	92	763	855
Virginia .....	9	30,881	4,001,804	22,146	8,907	30	75	460	535
West Virginia .....	3	9,733	1,359,391	7,248	1,500	10	16	196	212
North Carolina .....	6	.....	.....	.....	.....	.....	.....	.....	.....
South Carolina ...	3	8,846	1,399,862	7,471	2,560	14	18	144	162
Georgia .....	7	27,463	3,614,691	20,194	4,383	21	45	476	521
Florida .....	3	5,787	.....	4,068	.....	.....	20	104	124
S. Central Division:									
Kentucky .....	9	44,094	6,271,245	31,713	10,608	42	73	773	846
Tennessee .....	6	28,544	3,800,015	20,514	4,640	24	85	434	519
Alabama .....	5	13,739	1,882,866	10,571	.....	.....	42	200	242
Mississippi .....	3	4,887	.....	3,337	.....	.....	6	95	101
Louisiana .....	3	.....	.....	.....	.....	.....	.....	.....	.....
Texas .....	11	34,270	4,054,777	23,154	7,292	30	106	508	614
Arkansas .....	4	10,945	1,318,443	7,522	1,602	9	21	149	170
Oklahoma .....	0	0	0	0	0	0	0	0	0
Indian Territory ..	0	0	0	0	0	0	0	0	0
N. Central Division:									
Ohio .....	33	194,282	28,577,731	149,932	.....	.....	331	3,716	4,047
Indiana .....	19	70,465	9,401,924	51,063	21,771	77	138	1,238	1,376
Illinois .....	24	232,139	32,856,964	172,506	81,178	293	248	4,394	4,642
Michigan .....	24	96,548	13,196,293	69,980	30,741	74	105	1,905	1,010
Wisconsin .....	20	76,936	10,043,287	54,089	32,639	79	124	1,888	1,512
Minnesota .....	7	55,600	7,913,199	41,878	15,090	79	88	1,254	1,342
Iowa .....	15	52,249	6,861,778	37,656	12,060	94	64	1,095	1,159
Missouri .....	10	109,827	14,169,861	75,347	30,915	79	126	1,928	2,054
North Dakota .....	0	0	0	0	0	0	0	0	0
South Dakota .....	1	1,706	203,970	1,179	140	1	2	34	36
Nebraska .....	9	34,549	4,510,247	23,558	6,045	36	41	661	702
Kansas .....	11	35,290	4,523,061	25,470	4,654	19	75	587	662
Western Division:									
Montana .....	2	4,853	501,545	3,238	500	6	6	91	97
Wyoming .....	1	1,143	140,159	869	50	1	0	29	29
Colorado .....	7	26,743	3,272,487	17,923	.....	53	43	466	509
New Mexico .....	0	0	0	0	0	0	0	0	0
Arizona .....	0	0	0	0	0	0	0	0	0
Utah .....	2	12,198	1,428,136	8,117	2,563	13	22	175	197
Nevada .....	1	1,575	231,800	1,159	253	0	3	27	30
Idaho .....	0	0	0	0	0	0	0	0	0
Washington .....	3	14,798	2,054,555	10,612	.....	20	21	289	310
Oregon .....	1	9,810	1,399,179	7,364	1,238	10	17	187	204
California .....	9	85,418	11,781,612	60,102	13,204	117	112	1,556	1,668

a In the preparation of this table omissions and deficiencies in the returns of individual cities were supplied from the best sources available. If no accurate information could be had in any particular case, an estimate based upon the ratios developed in the other cities of the same State was used unless it appeared that the conditions were essentially different in the city for which precise data were lacking.

Blanks indicate that the number of cities which reported the item was not sufficient to justify an estimate to supply the deficiency.

b Statistics of 1891-92.

TABLE 3.—Summary by States of school property and expenditures in cities containing over 8,000 inhabitants. (a)

Cities of—	Number of buildings.	Number of seats or sittings for study.	Value of all public property used for school purposes.	Expenditure for super- vision and teaching.	Expenditure for all pur- poses except loans and bonds.
1	2	3	4	5	6
United States .....	6, 957	2, 693, 522	\$205, 338, 077	\$37, 717, 838	\$65, 981, 388
North Atlantic Division .....	3, 323	1, 287, 123	103, 172, 001	18, 104, 963	31, 678, 701
South Atlantic Division .....	451	206, 001	10, 048, 445	2, 497, 697	3, 475, 077
South Central Division .....	397	150, 270	7, 946, 424	1, 884, 400	2, 579, 273
North Central Division .....	2, 362	915, 185	67, 085, 358	12, 600, 751	22, 980, 728
Western Division .....	424	134, 943	17, 085, 849	2, 630, 027	5, 267, 609
North Atlantic Division:					
Maine .....	187	21, 835	1, 338, 047	232, 938	389, 749
New Hampshire .....	80	12, 439	1, 378, 195	165, 797	252, 568
Vermont .....	16	3, 190	206, 716	39, 188	75, 969
Massachusetts .....	1, 011	248, 590	25, 064, 514	3, 996, 991	7, 057, 581
Rhode Island .....	133	33, 374	2, 735, 052	477, 213	836, 697
Connecticut .....	198	57, 073	5, 130, 987	820, 806	1, 369, 947
New York .....	704	500, 515	39, 091, 194	7, 381, 385	12, 390, 223
New Jersey .....	220	104, 430	5, 712, 262	1, 294, 869	1, 985, 932
Pennsylvania .....	774	305, 677	22, 515, 034	3, 695, 776	7, 320, 035
South Atlantic Division:					
Delaware .....	25	9, 448	559, 517	106, 391	151, 533
Maryland .....	127	72, 570	3, 178, 173	845, 332	1, 176, 242
District of Columbia .....	78	6 36, 648	2, 775, 663	617, 105	860, 245
Virginia .....	65	26, 822	850, 012	259, 548	323, 633
West Virginia .....	23	8, 600	503, 145	99, 388	184, 489
North Carolina .....					
South Carolina .....	16	7, 950	219, 635	72, 767	107, 925
Georgia .....	64	26, 813	1, 373, 730	337, 254	453, 289
Florida .....	31		93, 170	36, 812	46, 421
South Central Division:					
Kentucky .....	89		2, 184, 685	554, 188	769, 805
Tennessee .....	54	21, 021	1, 294, 741	285, 633	423, 530
Alabama .....	31		652, 000		137, 602
Mississippi .....	9		156, 500	40, 909	57, 950
Louisiana .....					
Texas .....	114	29, 216	1, 999, 698	406, 189	605, 617
Arkansas .....	33	8, 803	628, 800	105, 410	166, 090
Oklahoma .....	0	0	0	0	0
Indian Territory .....	0	0	0	0	0
North Central Division:					
Ohio .....	454		14, 917, 026	2, 580, 278	4, 613, 016
Indiana .....	198	64, 154	4, 572, 730	795, 150	1, 390, 235
Illinois .....	438	215, 465	15, 973, 588	3, 540, 120	6, 375, 232
Michigan .....	270	91, 732	6, 144, 104	1, 102, 033	2, 011, 588
Wisconsin .....	208	73, 011	3, 997, 288	899, 640	1, 563, 174
Minnesota .....	142	52, 637	6, 776, 245	951, 345	1, 391, 218
Iowa .....	177	49, 454	3, 702, 621	640, 997	1, 201, 969
Missouri .....	230	99, 494	6, 304, 061	1, 270, 936	2, 501, 196
North Dakota .....	0	0	0	0	0
South Dakota b .....	8	1, 520	175, 000	24, 250	48, 271
Nebraska .....	113	31, 792	2, 611, 095	464, 761	1, 091, 915
Kansas .....	124	33, 495	1, 911, 600	331, 241	592, 914
Western Division:					
Montana b .....	24	4, 723	837, 430	80, 098	197, 494
Wyoming .....	5	1, 100	134, 250	22, 679	46, 474
Colorado .....	67	22, 624	4, 010, 142	434, 299	1, 101, 611
New Mexico .....	0	0	0	0	0
Arizona .....	0	0	0	0	0
Utah .....	53		1, 058, 186	139, 703	740, 984
Nevada b .....	6		50, 575		64, 194
Idaho .....	0	0	0	0	0
Washington .....	46	15, 640	1, 950, 380	270, 293	627, 572
Oregon .....	30	10, 000	835, 870	155, 098	222, 526
California .....	193	71, 056	8, 209, 016	1, 499, 084	2, 266, 754

a In the preparation of this table omissions and deficiencies in the returns of individual cities were supplied from the best sources available. If no accurate information could be had in any particular case, an estimate based upon the ratios developed in the other cities of the same State was used unless it appeared that the conditions were essentially different in the city for which precise data were lacking.

Blanks indicate that the number of cities which reported the item was not sufficient to justify an estimate to supply the deficiency.

b Statistics of 1891-92.

TABLE 4.—Comparative statistics of cities containing over 8,000 inhabitants, summarized by States, etc.

Cities of—	Ratio of private school enrollment to total public and private school enrollment.	1										Total cost of schools per capita in average attendance.	Average cost per day of tuition for one pupil.	Average daily expenditure per pupil for all purposes.
		2	3	4	5	6	7	8	9	10	11			
		Per cent.	Per cent.	Days.	Days.	Average number of pupils in attendance to each teacher.	Average number of teachers to each supervising officer.	Average number of seats for each 100 pupils in attendance.	Average number of seats or sitings to a building.	Value of school property per capita in average attendance.	Cost of tuition (i. e., supervision and teaching) per capita of pupils in average attendance.			
Union States.....	{ 1891-92. 1892-93.	21.5 21.2	72.1 71.9	137.9 137.0	191.5 190.6	35.9 35.3	20.2 20.2	126.5 130.3	371 387	\$97.92 102.25	\$16.83 18.29	\$28.80 31.92	8.79 9.60	15.04 16.75
North Atlantic Division.....	{ 1891-92. 1892-93.	21.0 20.7	71.1 71.2	138.5 138.0	194.7 193.7	35.0 34.5	21.5 20.6	128.5 131.2	383 388	102.25 105.15	18.23 18.43	31.63 32.28	9.37 9.52	16.67 16.67
South Atlantic Division.....	{ 1891-92. 1892-93.	17.8 18.6	72.0 70.7	137.3 131.7	190.7 188.3	37.3 36.4	28.9 26.3	121.9 133.1	407 457	98.37 61.90	14.79 16.14	23.08 22.45	7.75 8.66	12.10 12.05
South Central Division.....	{ 1891-92. 1892-93.	24.4 22.5	70.7 72.7	131.2 133.9	185.5 184.2	38.5 38.6	16.4 26.4	112.2 126.0	324 379	72.01 66.73	15.30 15.81	21.50 21.62	8.25 8.53	11.58 11.74
North Central Division.....	{ 1891-92. 1892-93.	23.8 23.6	74.0 73.2	138.5 137.8	187.2 188.4	36.4 35.9	19.3 19.8	127.4 130.4	368 388	96.50 95.54	17.63 17.95	30.21 32.73	9.40 9.53	16.14 17.37
Western Division.....	{ 1891-92. 1892-93.	13.9 13.3	70.7 69.9	137.1 133.5	194.1 191.1	36.9 35.9	13.8 13.8	124.8 123.4	312 318	154.00 156.23	23.87 21.05	44.52 48.16	12.30 12.59	22.95 25.21
North Atlantic Division:														
Maine.....	{ 1891-92. 1892-93.	18.8 36.0	76.3 66.1	135.4 124.8	177.4 173.3	28.2 30.3	25.0 15.4	140.5 147.7	117 156	88.12 163.70	14.21 19.70	25.08 30.00	8.45 11.36	14.14 17.31
New Hampshire.....	{ 1891-92. 1892-93.	32.6 32.1	66.1 66.1	118.9 118.0	180.0 180.0	32.1 32.1	12.6 12.6	130.9 130.9	199 199	84.80 81.00	16.08 16.08	31.09 31.09	8.93 8.93	17.31 17.31
Vermont.....	{ 1891-92. 1892-93.	15.3 15.3	75.1 75.1	144.8 144.8	192.8 192.8	33.0 33.0	25.8 25.8	157.0 157.0	246 246	128.23 128.23	20.46 20.46	36.14 36.14	10.61 10.61	18.74 18.74
Massachusetts.....	{ 1891-92. 1892-93.	18.8 17.8	62.3 69.1	116.7 137.2	187.3 198.7	33.0 32.2	30.8 15.6	150.0 131.5	251 288	122.95 118.25	21.45 18.91	27.61 31.57	11.46 9.52	20.09 15.88
Rhode Island.....	{ 1891-92. 1892-93.	17.8 23.2	69.1 70.0	137.2 135.5	198.7 193.6	32.2 34.9	15.6 17.0	131.5 132.8	288 711	118.25 105.70	18.91 17.58	31.57 32.86	9.52 10.11	15.88 16.98
Connecticut.....	{ 1891-92. 1892-93.	23.2 22.3	70.0 66.1	135.5 131.3	193.6 198.5	34.9 36.5	17.0 14.2	132.8 129.4	711 475	105.70 70.76	17.58 16.04	32.86 24.61	10.11 8.08	16.98 12.39
New York.....	{ 1891-92. 1892-93.	22.3 19.6	66.1 73.1	131.3 142.2	198.5 194.4	36.5 35.8	14.2 36.4	129.4 129.4	475 395	70.76 95.34	16.04 15.65	24.61 30.99	8.08 8.05	12.39 15.94
New Jersey.....	{ 1891-92. 1892-93.	22.3 19.6	66.1 73.1	131.3 142.2	198.5 194.4	36.5 35.8	14.2 36.4	129.4 129.4	475 395	70.76 95.34	16.04 15.65	24.61 30.99	8.08 8.05	12.39 15.94
New York.....	{ 1891-92. 1892-93.	22.3 19.6	66.1 73.1	131.3 142.2	198.5 194.4	36.5 35.8	14.2 36.4	129.4 129.4	475 395	70.76 95.34	16.04 15.65	24.61 30.99	8.08 8.05	12.39 15.94
Pennsylvania.....	{ 1891-92. 1892-93.	22.3 19.6	66.1 73.1	131.3 142.2	198.5 194.4	36.5 35.8	14.2 36.4	129.4 129.4	475 395	70.76 95.34	16.04 15.65	24.61 30.99	8.08 8.05	12.39 15.94
South Atlantic Division:														
Delaware.....	{ 1891-92. 1892-93.	18.8 36.0	76.3 66.1	135.4 124.8	177.4 173.3	28.2 30.3	25.0 15.4	140.5 147.7	117 156	88.12 163.70	14.21 19.70	25.08 30.00	8.45 11.36	14.14 17.31
Maryland.....	{ 1891-92. 1892-93.	20.7 17.6	71.7 75.6	128.5 132.3	195.0 190.0	34.2 31.8	101.0 45.4	136.9 147.9	378 571	81.06 64.79	15.41 17.23	21.94 24.08	7.90 8.66	11.26 12.05
District of Columbia.....	{ 1891-92. 1892-93.	20.7 17.6	71.7 75.6	128.5 132.3	195.0 190.0	34.2 31.8	101.0 45.4	136.9 147.9	378 571	81.06 64.79	15.41 17.23	21.94 24.08	7.90 8.66	11.26 12.05
Virginia.....	{ 1891-92. 1892-93.	22.4 13.4	71.7 74.5	129.6 138.7	180.7 186.3	35.2 34.2	20.4 21.2	121.9 118.7	470 374	92.38 69.41	20.53 13.71	28.61 26.05	11.73 7.36	16.34 13.66
West Virginia.....	{ 1891-92. 1892-93.	22.4 13.4	71.7 74.5	129.6 138.7	180.7 186.3	35.2 34.2	20.4 21.2	121.9 118.7	470 374	92.38 69.41	20.53 13.71	28.61 26.05	11.73 7.36	16.34 13.66
North Carolina.....	{ 1891-92. 1892-93.	22.4 13.4	71.7 74.5	129.6 138.7	180.7 186.3	35.2 34.2	20.4 21.2	121.9 118.7	470 374	92.38 69.41	20.53 13.71	28.61 26.05	11.73 7.36	16.34 13.66
South Carolina.....	{ 1891-92. 1892-93.	22.4 13.4	71.7 74.5	129.6 138.7	180.7 186.3	35.2 34.2	20.4 21.2	121.9 118.7	470 374	92.38 69.41	20.53 13.71	28.61 26.05	11.73 7.36	16.34 13.66
Georgia.....	{ 1891-92. 1892-93.	22.4 13.4	71.7 74.5	129.6 138.7	180.7 186.3	35.2 34.2	20.4 21.2	121.9 118.7	470 374	92.38 69.41	20.53 13.71	28.61 26.05	11.73 7.36	16.34 13.66
Florida.....	{ 1891-92. 1892-93.	22.4 13.4	71.7 74.5	129.6 138.7	180.7 186.3	35.2 34.2	20.4 21.2	121.9 118.7	470 374	92.38 69.41	20.53 13.71	28.61 26.05	11.73 7.36	16.34 13.66



TABLE 4.—Comparative statistics of cities containing over 8,000 inhabitants, summarized by States, etc.—Continued.

Cities of—	1																			
	Ratio of private school enrollment to total public and private school enrollment.	2	3	Average number of days of attendance of each pupil enrolled.	4	5	Average number of pupils in attendance to each teacher.	6	Average number of teachers to each pupil.	7	8	9	Value of school property per capita and average attendance.	10	Cost of tuition (i. e., supervision of schools) per capita and average attendance.	11	12	13	Average cost per day of tuition for one pupil.	14
South Central Division:																				
Kentucky.....	19.4	71.9	142.2	197.7	37.5	20.1	102.5	262	63.91	17.48	24.28	8.84	12.27							
Tennessee.....	14.0	71.9	133.2	185.3	39.5	21.6	102.5	389	63.11	13.92	20.64	7.52	11.14							
Alabama.....		76.9	137.0	178.1	43.7				61.67		13.02		7.31							
Mississippi.....		68.3			33.0				46.90	12.26	17.37									
Louisiana.....	17.5	67.5	113.3	175.2	37.7	20.5	126.2	262	86.40	17.55	26.17	10.02	14.93							
Texas.....	12.8	63.7	120.5	175.3	43.2	18.9	117.0	267	83.60	14.01	22.08	8.00	12.60							
North Central Division:																				
Ohio.....	23.6	77.2	147.1	190.6	37.0	17.9	125.7	324	99.50	17.21	30.77	9.03	16.14							
Indiana.....	25.9	74.3	141.5	190.4	37.2	15.8	124.9	492	92.60	20.55	27.23	8.46	14.79							
Illinois.....	24.2	72.5	142.5	188.5	34.8	27.2	131.1	340	87.80	15.75	28.75	10.77	20.02							
Michigan.....	29.8	70.3	130.5	185.6	35.8	19.1	135.0	351	83.91	16.63	28.90	8.96	15.25							
Wisconsin.....	21.4	74.4	142.3	191.3	30.8	17.0	127.2	371	163.77	23.00	33.62	12.02	17.50							
Minnesota.....	18.7	72.1	131.3	182.2	32.5	12.3	131.3	279	98.32	17.02	31.91	9.35	17.52							
Iowa.....	22.0	68.6	129.0	188.1	36.7	26.0	132.0	433	83.66	16.86	33.20	8.97	14.02							
Missouri.....																				
North Dakota.....																				
South Dakota.....	7.6	69.1	119.5	173.0	26.0	36.0	128.9	190	148.43	20.56	40.94	11.80	23.17							
Nebraska.....	14.9	68.2	130.6	191.5	33.6	19.5	135.0	281	110.82	19.73	46.33	10.30	24.21							
Kansas.....	11.7	72.2	128.2	177.6	38.5	34.8	130.9	270	75.03	13.00	23.28	7.24	13.11							
Western Division:																				
Montana.....	9.3	66.7	121.9	182.7	33.4	16.1	145.9	197	238.60	24.75	60.99	13.23	33.40							
Wyoming.....	4.2	70.0	122.6	161.3	29.9	29.0	126.6	220	154.53	26.10	53.47	16.18	33.15							
Colorado.....		67.0	122.4	182.5	36.9		126.2	338	223.74	24.23	61.46	13.27	33.67							
Utah.....	17.4	66.5	117.0	176.0	41.2	15.1			130.40	17.21	91.30	9.78	51.90							
Nevada.....	13.8	73.6	147.1	200.0	38.6				43.64		55.39		27.70							
Idaho.....																				
Washington.....		71.7	138.9	193.6	34.2	15.5	147.4	340	183.65	25.52	59.13	13.16	30.54							
Oregon.....	11.2	75.1	142.6	190.0	36.1	20.4	135.8	333	113.50	21.06	30.22	11.08	15.90							
California.....	13.4	70.4	137.9	196.0	36.0	14.3	118.2	368	136.60	24.94	37.71	12.72	19.24							

a Statistics of 1891-92.



## IV.—PUBLIC HIGH SCHOOLS AND PRIVATE SECONDARY SCHOOLS.

In Part IV of this report, Tables 4 and 5, will be found the names of the 2,812 public high (secondary) schools and the 1,434 private secondary schools reporting to this office for the year ending June 30, 1893. The post-office address of each school is given, and the name of the principal, the two lists being arranged alphabetically by States. In the same line with the name of the institution is given the number of instructors, the number of secondary students, and the number below the secondary grade. The tables also give the number of students in each school preparing for college classical and scientific courses, and the number of graduates. The number of college preparatory students in the class that was graduated in 1893 is also given for each school. The number of colored students in public and private secondary schools is shown. Male and female students are numbered in separate columns in the detail tables.

In the following pages are twelve tables in which is summarized by States and divisions all the statistics contained in the two detail tables in Part IV relating to public and private secondary schools.

Table 1 shows that in the 2,812 public high schools reporting there were 9,489 teachers, 232,951 students in the secondary grades, and 436,855 pupils below the secondary grades. Of the number in the high school grades 3,227 were pupils in colored schools.

Table 2 gives the number of college preparatory students and the number of graduates. In the 2,812 public high schools, 17,572 students were preparing for the college classical course and 16,563 were preparing for college scientific courses. The total number of graduates in 1893 was 29,410, and of these 8,815 were college preparatory students.

Tables 3, 4, and 5 give the number of students pursuing each of the ten leading high school branches. Latin is studied by 100,319 students, Greek by 7,922, French by 14,959, German by 27,760, algebra by 123,177, geometry by 60,570, trigonometry by 6,348, physics by 54,219, chemistry by 23,285, and history by 78,917.

Table 6 gives the number of volumes in the libraries, the value of the equipments, and the income of the public high schools of the country. The summary shows that the public high school libraries so far as reported contain 1,211,147 volumes. The aggregate value of buildings and grounds was \$51,811,044. The schools received State, county, and municipal aid to the amount of \$5,923,800, and received from tuition fees, \$616,350. The amount received for support from all sources was \$8,374,104. This total is larger than the sum of the other two items and results from the fact that many schools reported only the total amounts received from all sources.

Tables 7, 8, 9, 10, 11, and 12 give the summaries of statistics for private secondary schools, corresponding to the same items in the preceding six tables for public secondary schools. These tables are

arranged so that they can be easily compared column by column, Table 1 with Table 7, Table 2 with Table 8, etc.

In the 1,434 private secondary schools and academies there were 6,261 teachers, 96,147 secondary students, 64,180 elementary pupils, 15,009 preparing for college classical courses, 10,476 preparing for college scientific courses. There were 8,319 graduates from these private high schools.

Tables 9, 10, and 11 show that the ten principal high school branches were pursued by the students as follows: Latin by 37,716 students, Greek by 8,278, French 17,756, German 15,025, algebra 41,106, geometry 19,587, trigonometry 5,539, physics 18,998, chemistry 9,554, and history by 31,212 students.

Table 12 shows that the libraries of the private high schools contain 1,219,118 volumes and that the value of buildings and grounds aggregates \$44,395,941. The amount of income from State and municipal appropriations was \$201,440; from tuition fees, \$4,586,530; from productive funds, \$1,545,968, making the total sum for support \$6,333,938.

It should be noted that the information relating to the income of both public and private high schools is far from complete. The aggregate sums given in the two tables for the support of schools, \$8,374,104 for public high schools and \$6,333,938 for private high schools, should be much larger. Many schools failed to report on these items and others sent incomplete figures. In the city high schools, particularly, it was difficult to separate the amounts expended for their support from the general school funds. The actual aggregate value of buildings and grounds occupied by secondary schools doubtless exceeds the sums given in Tables 6 and 12.

Table 13 summarizes the statistics of public and private secondary schools for the whole country, placing the two classes of institutions in parallel columns and giving grand totals. The percentage of male and female students to the total number of students in each is shown, as well as the percentages in certain studies. To those seeking information in a condensed form relating to secondary schools this table is invaluable.

Tables 14 and 15 have been arranged to show the number of private secondary schools controlled or supported by religious denominations. From the first column of Table 14 it will be seen that 824 of the 1,434 private secondary schools are under nonsectarian management. The remainder of that table and Table 15 will show that of the remaining 610 schools 173 are under Roman Catholic control, 90 Episcopal, 68 Presbyterian, 59 Baptist, 49 Methodist, 45 Congregational, 42 Friends, 28 Southern Methodists, 23 Lutheran, and 33 under the control of other religious denominations. From the tables can also be learned the distribution of teachers and students in these denominational schools. Of the 96,147 students in private secondary schools, 55,129 are in the nonsectarian schools.

Table 16 will in some measure illustrate the growth of public and private secondary schools in this country for the past twenty years. The figures are taken from the annual reports of the Commissioner of Education beginning with 1871 when this Bureau collected the first statistics from private high schools and academies. The report of 1876 contains the first detailed information relating to public high schools and the figures were collected exclusively from public high schools in the larger cities. It was not till 1889 that an attempt was made to collect statistics from all the public high schools of the country.

In referring to Table 16 it should be noted that the exclusive city high school statistics end with the report of 1888-89 and the statistics for public high schools in general begin with 1889-90. The lack of uniformity in the apparent growth of private secondary schools as displayed in the table should be explained. Where to draw the line between secondary and elementary pupils was long a vexed question. Perhaps one year all pupils who pursued only one secondary study were classed as high school students while the very next year the total would be reduced by excluding all who did not pursue at least two secondary studies. Perhaps greater effort was made to collect statistics one year than was made the next. This may also in a measure account for the falling off in the number of students as shown in several of the annual reports. Taking these discrepancies into consideration and reviewing the whole period from 1871 to 1893 a fairly accurate idea of the relative growth of public and private secondary schools can be gained from an inspection of Table 16. The net gain for the private schools has not been very large in the twenty-two years, but public high schools have had a remarkable growth.



TABLE 1.—Summary of statistics of public high schools.

## SCHOOLS, INSTRUCTORS, AND STUDENTS.

State.	Number of schools.	Secondary instructors.			Students in secondary grades.			Colored secondary students (included in preceding column).			Students below secondary grades.		
		Male.	Female.	Total.	Male.	Female.	Total.	Male.	Female.	Total.	Male.	Female.	Total.
United States...	2,812	4,120	5,360	9,489	93,464	139,437	232,951	1,155	2,071	3,227	209,621	227,234	436,855
North Atlantic Division:	835	1,211	2,023	3,234	33,476	46,422	79,898	151	263	414	47,453	51,812	99,265
South Atlantic Division:	166	243	275	518	4,642	6,945	11,587	242	486	728	11,056	11,996	23,052
South Central Division:	218	301	320	621	5,773	8,088	13,861	206	332	538	21,584	24,313	45,897
North Central Division:	1,474	2,178	2,506	4,684	44,820	70,986	115,806	541	969	1,510	118,246	127,146	245,392
Western Division:	119	196	236	432	4,753	7,046	11,799	15	22	37	11,282	11,967	23,249
North Atlantic Division:													
Maine.....	98	114	107	221	2,510	3,452	5,962	2	3	5	775	881	1,656
New Hampshire.....	37	42	55	97	1,014	1,398	2,412	1	1	2	294	350	644
Vermont.....	44	43	63	106	1,040	1,322	2,362	2	4	6	2,171	2,328	4,499
Massachusetts.....	190	311	510	821	9,313	11,796	21,109	49	66	115	431	794	1,225
Rhode Island.....	10	25	40	65	611	1,064	1,675	5	5	10	15	16	31
Connecticut.....	44	76	107	183	1,781	2,405	4,186	2	10	12	1,455	1,558	3,013
New York.....	216	312	706	1,018	10,845	13,481	24,326	38	52	90	25,180	26,849	52,029
New Jersey.....	42	65	121	186	1,700	2,780	4,480	12	34	46	5,881	6,133	12,014
Pennsylvania.....	154	223	314	537	4,662	8,724	13,386	40	88	128	11,251	12,903	24,154
South Atlantic Division:													
Delaware.....	10	14	15	29	231	314	595	0	0	0	640	599	1,239
Maryland.....	31	41	38	79	733	1,322	2,055	90	95	185	2,681	2,863	5,544
Dist. Columbia.....	4	32	48	80	627	1,190	1,817	109	300	409	0	0	0
Virginia.....	31	35	54	89	668	1,182	1,850	13	45	58	1,449	1,589	3,038
West Virginia.....	3	3	7	10	97	167	264	2	1	3	908	968	1,876
North Carolina.....	10	15	12	27	232	323	605	2	10	12	1,365	1,576	2,941
South Carolina.....	13	16	25	41	191	523	714	0	0	0	734	804	1,538
Georgia.....	48	67	57	124	1,419	1,496	2,915	18	27	45	2,432	2,625	5,057
Florida.....	16	20	19	39	344	428	772	8	8	16	847	972	1,819
South Central Division:													
Kentucky.....	35	50	44	94	945	1,410	2,355	35	108	143	2,574	2,710	5,284
Tennessee.....	38	50	50	100	1,070	1,506	2,576	32	32	64	2,641	3,415	6,056
Alabama.....	18	21	29	50	377	705	1,082	19	45	64	1,600	1,768	3,368
Mississippi.....	32	42	40	82	636	800	1,436	41	44	85	2,858	2,868	5,726
Louisiana.....	6	14	17	31	332	259	591	0	0	0	323	378	701
Texas.....	70	100	119	219	1,950	2,818	4,768	49	50	99	8,299	9,279	17,578
Arkansas.....	18	21	21	42	409	590	999	30	53	83	3,199	3,545	6,744
Indian Territory.....	1	3	.....	3	54	.....	54	.....	.....	.....	90	.....	90
North Central Division:													
Ohio.....	293	426	495	921	8,734	12,678	21,412	148	240	388	18,384	18,904	37,378
Indiana.....	121	219	195	414	4,275	6,383	10,658	73	119	192	9,402	10,044	19,446
Illinois.....	206	362	377	739	6,606	12,456	19,062	90	159	249	10,221	11,207	21,428
Michigan.....	169	237	362	599	6,082	8,976	15,058	26	48	74	21,717	22,513	44,230
Wisconsin.....	134	163	183	346	3,318	4,807	8,125	2	3	5	5,845	6,217	12,062
Minnesota.....	79	121	197	318	2,805	4,276	7,081	4	12	16	8,877	9,971	18,848
Iowa.....	189	242	338	580	5,402	8,664	14,066	42	53	95	17,482	19,711	37,193
Missouri.....	77	141	143	284	2,909	5,416	8,325	53	144	197	9,547	10,261	19,808
North Dakota.....	1	1	2	3	24	28	52	.....	.....	.....	.....	.....	.....
South Dakota.....	8	7	17	24	131	221	352	0	2	2	427	500	927
Nebraska.....	95	117	102	219	2,113	3,183	5,296	11	17	28	8,224	8,717	16,941
Kansas.....	102	142	95	237	2,421	3,898	6,319	92	172	264	8,120	9,011	17,131
Western Division:													
Montana.....	12	10	15	25	218	284	502	1	0	1	2,354	2,825	5,179
Wyoming.....	2	2	3	5	63	56	119	0	0	0	688	609	1,357
Colorado.....	23	48	56	104	795	1,261	2,056	2	7	9	1,515	1,619	3,134
New Mexico.....	2	3	2	5	43	19	62	0	0	0	90	0	90
Arizona.....	2	3	1	4	36	54	90	0	0	0	132	128	260
Utah.....	2	4	4	8	100	166	266	.....	.....	.....	.....	.....	.....
Nevada.....	9	8	6	14	159	260	419	0	0	0	433	499	932
Idaho.....	5	5	3	8	70	91	161	2	2	4	1,071	890	1,961
Washington.....	14	23	31	54	418	569	987	1	1	2	1,503	1,626	3,129
Oregon.....	9	13	14	27	339	555	894	1	0	1	732	865	1,597
California.....	39	77	101	178	2,512	3,731	6,243	8	12	20	2,764	2,846	5,610

TABLE 2.—Summary of statistics of public high schools.

## STUDENTS AND COURSES OF STUDY.

State.	Students preparing for college.						Graduates in class of 1893.			College preparatory students in graduating class of 1893.
	Classical course.			Scientific course.			Male.	Female.	Total.	
	Male.	Female.	Total.	Male.	Female.	Total.				
United States.....	8,985	8,587	17,572	8,521	8,042	16,563	10,256	19,154	29,410	8,815
North Atlantic Division.....	4,282	3,258	7,540	2,588	1,674	4,262	4,151	6,980	11,131	2,395
South Atlantic Division.....	691	478	1,169	170	164	334	421	825	1,246	352
South Central Division.....	836	896	1,732	548	590	1,138	417	790	1,207	846
North Central Division.....	2,859	3,606	6,465	4,549	4,965	9,514	4,830	9,755	14,585	4,661
Western Division.....	317	349	666	666	649	1,315	437	804	1,241	561
North Atlantic Division:										
Maine.....	513	385	898	108	43	151	236	459	695	158
New Hampshire.....	146	130	276	83	45	128	123	218	341	86
Vermont.....	145	95	240	129	102	231	118	215	333	142
Massachusetts.....	1,519	1,175	2,694	693	195	888	1,328	1,999	3,327	635
Rhode Island.....	215	200	415	81	10	91	76	151	227	80
Connecticut.....	516	405	921	246	34	280	181	367	548	181
New York.....	914	559	1,473	940	727	1,667	1,317	1,642	2,959	776
New Jersey.....	118	78	196	136	63	199	192	464	656	103
Pennsylvania.....	196	231	427	222	455	677	580	1,465	2,045	234
South Atlantic Division:										
Delaware.....	3	0	3	16	6	22	43	39	82	6
Maryland.....	35	47	82	12	27	39	44	136	180	46
District of Columbia.....	52	20	72	36	6	42	126	248	374	43
Virginia.....	84	67	151	32	64	96	50	134	184	63
West Virginia.....	0	0	0	0	0	0	12	35	47	5
North Carolina.....	22	21	43	10	0	10	22	47	69	37
South Carolina.....	42	46	88	17	15	32	5	39	44	23
Georgia.....	424	254	678	30	34	64	102	119	221	105
Florida.....	29	23	52	17	12	29	17	28	45	24
South Central Division:										
Kentucky.....	94	88	182	74	63	142	82	120	211	84
Tennessee.....	113	118	231	77	121	198	63	174	237	61
Alabama.....	39	38	77	12	1	13	23	62	85	39
Mississippi.....	105	128	233	76	67	143	45	99	144	398
Louisiana.....	30	25	55	18	14	32	54	10	64	6
Texas.....	374	421	795	231	282	513	103	248	357	246
Arkansas.....	81	78	159	60	37	97	38	68	106	39
Indian Territory.....							3		3	
North Central Division:										
Ohio.....	742	635	1,377	1,107	815	1,922	1,036	1,967	3,003	738
Indiana.....	319	428	747	204	158	362	474	863	1,337	462
Illinois.....	405	555	960	549	740	1,289	683	1,730	2,413	578
Michigan.....	166	176	342	716	736	1,452	575	1,056	1,631	662
Wisconsin.....	115	189	304	334	327	661	381	736	1,117	381
Minnesota.....	226	140	366	716	926	1,642	273	473	746	423
Iowa.....	293	557	850	356	468	824	635	1,248	1,883	550
Missouri.....	181	329	510	243	308	551	252	643	895	240
North Dakota.....	24	28	52					6	6	6
South Dakota.....	3	4	7	12	16	28	15	45	60	15
Nebraska.....	165	244	409	154	227	381	211	434	645	303
Kansas.....	220	321	541	158	234	392	295	554	849	303
Western Division:										
Montana.....	33	43	76	16	21	37	19	35	54	28
Wyoming.....				3	4	7	1	7	8	
Colorado.....	96	46	142	111	159	270	75	143	218	107
New Mexico.....	10	0	10	0	0	0	3	3	6	0
Arizona.....	0	0	0	4	8	12	4	8	12	2
Utah.....							5	10	15	7
Nevada.....	1	1	2	13	13	26	12	45	57	15
Idaho.....	16	27	43	0	5	5	4	16	20	9
Washington.....	6	8	14	10	1	11	34	46	80	36
Oregon.....	46	89	135	10	17	27	34	74	108	75
California.....	109	135	244	499	421	920	246	417	663	282

TABLE 3.—*Summary of statistics of public high schools.*

## NUMBER OF STUDENTS IN CERTAIN STUDIES.

State.	Latin.			Greek.			French.			German.		
	Male.	Female.	Total.	Male.	Female.	Total.	Male.	Female.	Total.	Male.	Female.	Total.
United States.....	39,311	61,008	100,319	4,872	3,050	7,922	5,288	9,071	14,959	9,026	18,134	27,760
North Atlantic Division.....	13,429	19,431	32,851	3,364	2,030	5,394	4,352	6,342	10,694	3,267	6,441	9,708
South Atlantic Division.....	2,970	4,061	7,031	261	131	392	105	574	679	352	1,184	1,536
South Central Division.....	2,890	4,161	7,051	197	35	232	31	361	392	398	437	835
North Central Division.....	18,251	30,823	49,074	898	752	1,650	726	2,108	2,834	5,192	9,314	14,506
Western Division.....	1,780	2,532	4,312	152	102	254	74	286	360	417	758	1,175
North Atlantic Division:												
Maine.....	1,157	1,797	2,954	448	288	736	252	587	839	17	43	60
New Hampshire.....	490	794	1,284	107	104	211	186	295	481	8	16	24
Vermont.....	456	575	1,031	107	64	171	72	133	205	41	60	101
Massachusetts.....	4,149	6,080	10,229	1,182	832	2,014	3,013	3,510	6,523	554	1,247	1,801
Rhode Island.....	3,377	543	3,920	123	62	185	144	164	308	18	49	67
Connecticut.....	1,157	1,277	2,434	392	152	544	240	468	708	286	441	727
New York.....	3,331	4,322	7,653	747	429	1,176	879	844	1,223	1,743	2,517	4,260
New Jersey.....	475	778	1,253	68	52	120	39	108	147	115	827	942
Pennsylvania.....	1,828	3,205	5,093	190	47	237	27	233	260	485	1,241	1,726
South Atlantic Division:												
Delaware.....	237	252	489	0	0	0	0	0	0	6	5	11
Maryland.....	336	469	805	36	22	58	37	78	115	77	359	436
District of Columbia.....	443	704	1,147	34	33	67	0	0	0	133	452	585
Virginia.....	479	978	1,457	5	1	6	37	148	185	118	344	462
West Virginia.....	35	61	96	0	1	1						
North Carolina.....	176	238	414	26	56	82	0	0	0	0	0	0
South Carolina.....	106	162	268	11	2	13	2	128	130	2	0	2
Georgia.....	1,033	1,066	2,039	138	14	152	10	192	202	14	21	35
Florida.....	125	191	316	11	2	13	19	28	47	2	3	5
South Central Division:												
Kentucky.....	620	959	1,579	128	7	135	0	12	12	236	110	346
Tennessee.....	510	921	1,431	14	8	22	2	6	8	2	4	6
Alabama.....	139	323	458	14	1	15	11	86	97	5	34	39
Mississippi.....	293	372	665	13	2	15	0	39	39	0	0	0
Louisiana.....	303	72	375	0	0	0	0	156	156	0	0	0
Texas.....	845	1,251	2,096	26	17	43	15	62	77	150	264	414
Arkansas.....	169	258	427	2	0	2	3	0	3	5	25	30
Indian Territory.....	20		20									
North Central Division:												
Ohio.....	4,222	6,442	10,664	274	151	425	58	323	381	1,031	1,665	2,696
Indiana.....	2,146	3,186	5,332	29	21	50	3	11	14	374	580	954
Illinois.....	2,729	5,728	8,457	145	134	279	255	823	1,078	761	1,983	2,744
Michigan.....	2,003	3,022	5,025	144	165	309	142	349	491	903	1,519	2,422
Wisconsin.....	950	1,236	2,186	9	30	39	16	22	38	613	903	1,516
Minnesota.....	1,350	1,987	3,337	103	60	163	87	343	430	416	774	1,190
Iowa.....	1,796	3,295	5,091	52	48	100	6	44	50	415	767	1,182
Missouri.....	1,081	2,605	3,686	88	73	161	135	127	262	229	405	634
North Dakota.....	24	28	52									
South Dakota.....	63	127	190	1	1	2	0	0	0	6	19	25
Nebraska.....	771	1,193	1,964	35	37	72	17	44	61	208	294	502
Kansas.....	1,106	1,974	3,080	18	32	50	7	22	29	236	405	641
Western Division:												
Montana.....	73	95	168	0	0	0	0	0	0	30	17	47
Wyoming.....	20	25	45	0	0	0	0	0	0	0	0	0
Colorado.....	460	747	1,207	64	29	93	35	121	156	153	346	499
New Mexico.....	4	8	12									
Arizona.....	3	4	7	0	0	0	0	0	0	0	0	0
Utah.....	24	34	58	4	0	4	0	6	6	6	9	15
Nevada.....	7	24	31	0	0	0	0	0	0	3	5	8
Idaho.....	16	23	39	0	0	0	0	0	0	0	0	0
Washington.....	119	168	287	1	0	1	0	0	0	26	68	94
Oregon.....	86	80	166	0	0	0	0	0	0	60	149	209
California.....	968	1,324	2,292	83	73	156	39	159	198	139	164	303



TABLE 4.—Summary of statistics of public high schools.

## NUMBER OF STUDENTS IN CERTAIN STUDIES.

State.	Algebra.			Geometry.			Trigonometry.		
	Male.	Female.	Total.	Male.	Female.	Total.	Male.	Female.	Total.
United States .....	49, 874	73, 303	123, 177	23, 603	36, 967	60, 570	2, 807	3, 541	6, 348
North Atlantic Division ..	15, 760	22, 163	37, 923	8, 438	12, 606	21, 044	839	689	1, 528
South Atlantic Division...	3, 024	4, 575	7, 599	1, 435	2, 138	3, 573	311	319	630
South Central Division....	3, 648	4, 076	7, 724	1, 638	2, 539	4, 177	355	648	1, 003
North Central Division....	24, 644	38, 426	63, 070	10, 446	17, 207	27, 713	1, 181	1, 775	2, 956
Western Division .....	2, 798	4, 063	6, 861	1, 046	2, 417	4, 063	121	110	231
North Atlantic Division:									
Maine .....	1, 304	1, 711	3, 015	637	829	1, 466	10	1	11
New Hampshire .....	477	598	1, 075	257	360	617	15	0	15
Vermont .....	531	603	1, 134	224	291	515	4	0	4
Massachusetts .....	4, 140	4, 671	8, 811	2, 647	3, 154	5, 801	125	71	196
Rhode Island .....	321	434	755	151	211	362	19	1	20
Connecticut .....	1, 079	1, 367	2, 446	546	810	1, 356	133	31	164
New York .....	3, 944	5, 476	9, 420	2, 193	2, 965	5, 158	257	308	565
New Jersey .....	1, 144	1, 835	2, 979	383	715	1, 098	70	86	156
Pennsylvania .....	2, 820	5, 468	8, 288	1, 400	3, 271	4, 671	206	191	397
South Atlantic Division:									
Delaware .....	188	196	384	103	65	168	32	0	32
Maryland .....	462	1, 021	1, 483	323	695	993	79	101	180
District of Columbia....	275	489	764	207	350	557	70	16	86
Virginia .....	458	796	1, 254	156	275	431	29	68	97
West Virginia .....	231	299	530	19	58	77	9	28	37
North Carolina .....	213	276	489	82	118	200	0	0	0
South Carolina .....	108	355	463	27	158	185	0	0	0
Georgia .....	977	985	1, 962	453	403	856	85	94	179
Florida .....	132	158	290	60	66	126	7	12	19
South Central Division:									
Kentucky .....	519	953	1, 472	242	463	705	122	267	389
Tennessee .....	598	920	1, 518	283	372	655	27	41	68
Alabama .....	169	374	543	74	175	249	39	58	97
Mississippi .....	333	420	753	71	134	205	23	52	75
Louisiana .....	321	127	448	182	119	301	4	7	11
Texas .....	1, 414	939	2, 353	671	1, 069	1, 740	116	172	288
Arkansas .....	274	343	617	109	207	316	24	51	75
Indian Territory .....	20		20	6		6			
North Central Division:									
Ohio .....	5, 410	8, 423	13, 833	2, 580	4, 059	6, 639	548	780	1, 328
Indiana .....	2, 396	3, 490	5, 886	960	1, 464	2, 424	81	95	176
Illinois .....	3, 655	5, 973	9, 628	1, 546	3, 044	4, 590	155	240	395
Michigan .....	3, 084	4, 465	7, 549	1, 094	1, 690	2, 784	71	42	113
Wisconsin .....	1, 233	1, 801	3, 034	565	936	1, 501	28	157	185
Minnesota .....	1, 613	2, 245	3, 858	779	900	1, 679	13	26	39
Iowa .....	2, 911	4, 436	7, 347	1, 084	1, 929	3, 013	123	165	288
Missouri .....	1, 838	3, 447	5, 285	620	1, 281	1, 901	114	164	278
North Dakota .....	17	27	44	8	13	21			
South Dakota .....	68	107	175	37	71	108	4	1	5
Nebraska .....	997	1, 659	2, 656	468	763	1, 231	30	83	113
Kansas .....	1, 422	2, 353	3, 775	705	1, 117	1, 822	14	22	36
Western Division:									
Montana .....	92	117	209	40	38	78	7	9	16
Wyoming .....	25	27	52	33	16	49	0	0	0
Colorado .....	463	654	1, 122	258	399	657	44	47	91
New Mexico .....	4	9	13	3	4	7			
Arizona .....	36	48	84	10	15	25	0	0	0
Utah .....	76	140	216	14	18	32	5	3	8
Nevada .....	135	239	374	39	98	137	1	0	1
Idaho .....	53	65	118	19	33	52	5	5	10
Washington .....	244	316	560	84	123	207	7	2	9
Oregon .....	204	322	526	105	173	278	9	13	22
California .....	1, 461	2, 126	3, 587	1, 041	1, 500	2, 541	43	31	74

TABLE 5.—Summary of statistics of public high schools.

## NUMBER OF STUDENTS IN CERTAIN STUDIES.

State.	Physics.			Chemistry.			History.		
	Male.	Female.	Total.	Male.	Female.	Total.	Male.	Female.	Total.
United States .....	21,517	32,702	54,219	9,299	13,986	23,285	29,717	49,200	78,917
North Atlantic Division ..	7,055	10,447	17,502	3,630	4,848	8,478	10,451	16,937	27,388
South Atlantic Division...	1,148	2,215	3,363	437	535	972	1,938	3,749	5,687
South Central Division...	1,786	2,372	4,158	559	963	1,522	2,321	3,748	6,069
North Central Division...	10,275	16,051	26,326	4,093	6,772	10,865	12,786	21,255	34,041
Western Division .....	1,253	1,617	2,870	580	868	1,448	2,221	3,511	5,732
North Atlantic Division:									
Maine .....	586	748	1,334	321	309	630	766	1,015	1,781
New Hampshire .....	280	270	550	140	186	326	264	364	628
Vermont .....	222	253	475	115	123	238	235	355	590
Massachusetts .....	2,078	2,642	4,720	1,244	1,636	2,880	4,213	5,037	9,250
Rhode Island .....	115	269	384	53	111	169	247	502	749
Connecticut .....	402	574	976	179	266	445	666	1,083	1,749
New York .....	1,670	1,834	3,504	990	851	1,841	2,212	3,634	5,846
New Jersey .....	526	764	1,290	191	335	526	556	1,006	1,562
Pennsylvania .....	1,176	3,093	4,269	392	1,031	1,423	1,292	3,941	5,233
South Atlantic Division:									
Delaware .....	199	72	271	61	28	89	81	46	127
Maryland .....	249	673	922	93	45	138	259	731	990
District of Columbia .....	135	294	429	84	134	218	436	947	1,383
Virginia .....	152	346	498	66	133	199	318	714	1,032
West Virginia .....	12	36	48	8	25	33	49	97	146
North Carolina .....	51	71	122	5	12	17	177	212	389
South Carolina .....	35	293	328	3	48	51	109	424	533
Georgia .....	312	326	638	94	71	165	411	441	852
Florida .....	73	104	177	23	39	62	93	137	235
South Central Division:									
Kentucky .....	276	376	652	123	283	406	307	617	924
Tennessee .....	172	228	400	77	110	187	440	616	1,056
Alabama .....	56	125	181	15	37	52	107	264	371
Mississippi .....	218	280	498	22	49	71	164	287	451
Louisiana .....	86	49	135	60	57	117	246	189	435
Texas .....	780	1,105	1,885	181	322	503	876	1,542	2,418
Arkansas .....	154	269	423	67	105	172	167	203	370
Indian Territory .....	34	.....	34	14	.....	14	14	.....	14
North Central Division:									
Ohio .....	2,069	2,934	5,003	854	1,542	2,396	2,604	3,901	6,505
Indiana .....	1,033	1,467	2,500	649	724	1,373	1,230	1,826	3,056
Illinois .....	1,766	3,236	5,002	650	1,381	2,031	1,995	3,672	5,667
Michigan .....	1,205	1,709	2,914	553	787	1,345	1,498	2,541	4,039
Wisconsin .....	655	993	1,648	145	201	346	537	944	1,501
Minnesota .....	598	697	1,295	262	294	556	958	1,625	2,583
Iowa .....	1,206	1,887	3,093	336	576	912	1,610	2,649	4,259
Missouri .....	601	1,344	1,945	314	678	992	776	1,646	2,422
North Dakota .....	.....	8	8	.....	.....	.....	24	22	46
South Dakota .....	29	39	68	6	16	22	43	88	131
Nebraska .....	453	752	1,205	193	372	565	691	1,071	1,762
Kansas .....	630	685	1,315	126	201	327	800	1,270	2,070
Western Division:									
Montana .....	87	92	179	10	9	19	101	100	201
Wyoming .....	24	8	32	22	9	31	32	20	52
Colorado .....	219	308	527	82	159	241	565	935	1,498
New Mexico .....	4	5	9	.....	.....	.....	15	1	16
Arizona .....	13	13	26	0	0	0	16	26	42
Utah .....	7	12	19	5	3	8	19	38	57
Nevada .....	71	125	196	13	48	66	34	63	97
Idaho .....	18	23	41	5	5	10	21	42	63
Washington .....	78	103	181	36	51	87	92	130	222
Oregon .....	129	142	271	31	50	81	155	285	440
California .....	603	786	1,389	371	534	905	1,173	1,871	3,044

TABLE 6.—Summary of statistics of public high schools.

## EQUIPMENT AND INCOME.

State.	Number volumes in libraries.	Value of grounds, building, apparatus, etc.	Amount of State and municipal aid.	Income from tuition fees.	Total in- come from all sources.*
United States .....	\$1, 211, 147	\$51, 811, 044	\$5, 923, 800	\$616, 350	\$8, 374, 104
North Atlantic Division .....	487, 194	18, 649, 762	1, 474, 161	192, 555	2, 576, 018
South Atlantic Division .....	42, 725	1, 666, 356	340, 003	59, 734	404, 817
South Central Division .....	35, 663	2, 191, 607	511, 818	85, 420	616, 648
North Central Division .....	608, 421	25, 461, 646	3, 106, 584	250, 382	4, 235, 357
Western Division .....	37, 144	3, 841, 673	491, 234	28, 259	541, 264
North Atlantic Division:					
Maine .....	15, 401	658, 450	67, 015	4, 665	81, 735
New Hampshire .....	5, 903	672, 650	46, 366	4, 889	220, 480
Vermont .....	10, 969	680, 450	52, 263	12, 162	102, 640
Massachusetts .....	75, 478	5, 128, 017	163, 184	20, 781	295, 030
Rhode Island .....	6, 045	90, 700	12, 899	1, 604	14, 563
Connecticut .....	23, 727	1, 184, 218	39, 304	12, 116	72, 084
New York .....	260, 555	6, 016, 229	668, 327	101, 676	1, 135, 925
New Jersey .....	22, 027	892, 883	123, 457	10, 206	133, 663
Pennsylvania .....	67, 089	3, 326, 165	295, 346	24, 396	519, 898
South Atlantic Division:					
Delaware .....	1, 690	43, 500	16, 492	550	17, 042
Maryland .....	2, 356	187, 560	153, 305	14, 331	167, 636
District of Columbia .....	8, 005	600, 000			
Virginia .....	3, 548	110, 725	41, 041	4, 241	45, 282
West Virginia .....	805	59, 000	2, 500		2, 500
North Carolina .....	21, 000	157, 501	29, 443	1, 543	21, 986
South Carolina .....	770	83, 000	16, 610	3, 520	25, 210
Georgia .....	3, 721	363, 080	63, 462	35, 219	98, 621
Florida .....	830	71, 050	26, 210	330	26, 540
South Central Division:					
Kentucky .....	7, 361	261, 310	33, 571	7, 098	40, 669
Tennessee .....	1, 380	323, 572	98, 651	8, 011	106, 662
Alabama .....	5, 755	128, 250	33, 856	8, 661	42, 517
Mississippi .....	2, 922	153, 800	27, 734	21, 141	48, 875
Louisiana .....	1, 513	3, 500	4, 697	375	5, 072
Texas .....	11, 950	1, 085, 275	275, 391	37, 488	331, 875
Arkansas .....	3, 912	133, 900	37, 918	2, 646	40, 978
Indian Territory .....	800	100, 000			
North Central Division:					
Ohio .....	92, 239	4, 470, 991	778, 707	53, 365	832, 072
Indiana .....	79, 640	1, 744, 645	179, 352	11, 367	190, 719
Illinois .....	75, 521	3, 363, 451	343, 919	39, 526	404, 890
Michigan .....	103, 286	3, 335, 531	607, 016	52, 856	795, 787
Wisconsin .....	52, 489	1, 941, 275	43, 988	22, 581	404, 889
Minnesota .....	46, 518	2, 205, 528	157, 217	6, 420	248, 451
Iowa .....	59, 356	3, 429, 194	277, 814	28, 598	457, 011
Missouri .....	40, 320	1, 742, 060	273, 519	12, 507	286, 026
North Dakota .....	500			48	48
South Dakota .....	1, 185	182, 000	48, 458	1, 237	49, 695
Nebraska .....	20, 626	1, 268, 071	165, 265	9, 069	321, 672
Kansas .....	36, 741	1, 778, 900	231, 329	12, 768	244, 097
Western Division:					
Montana .....	2, 556	421, 000	32, 250	384	32, 634
Wyoming .....	1, 800	172, 000	4, 391		4, 391
Colorado .....	10, 019	1, 038, 700	66, 146	993	67, 139
New Mexico .....		3, 500			
Arizona .....	650	102, 000	5, 500	203	5, 803
Utah .....	275	400			
Nevada .....	1, 900	148, 500	63, 089	3, 779	66, 868
Idaho .....	2, 210	92, 000			
Washington .....	1, 938	491, 150	44, 274	475	58, 156
Oregon .....	1, 932	236, 473	15, 887	2, 133	26, 384
California .....	13, 834	1, 085, 950	250, 697	20, 192	279, 889

\*Includes also certain amounts not included in the preceding columns.



TABLE 7.—Summary of statistics of endowed academies, seminaries, and other private secondary schools for 1892-93.

## SCHOOLS, INSTRUCTORS AND STUDENTS.

State.	Number of schools.	Secondary instructors.			Students in secondary grades.			Colored secondary students (included in preceding column).			Students below secondary grades.		
		Male.	Female.	Total.	Male.	Female.	Total.	Male.	Female.	Total.	Male.	Female.	Total.
United States.....	1,434	3,038	3,223	6,261	50,074	46,073	96,147	391	432	823	29,398	34,782	64,180
North Atlantic Division..	518	1,341	1,473	2,814	20,299	17,840	38,139	21	14	35	8,929	8,073	17,002
South Atlantic Division...	267	465	408	873	7,726	5,796	13,522	254	276	530	5,633	7,264	12,897
South Central Division....	282	430	495	925	8,432	8,811	17,243	108	137	245	6,797	8,396	15,193
North Central Division....	275	619	642	1,261	11,387	10,959	22,346	7	5	12	5,407	7,082	12,489
Western Division.....	92	183	205	388	2,230	2,667	4,897	1	0	1	2,632	3,967	6,599
North Atlantic Division:													
Maine.....	29	43	71	114	1,201	1,214	2,415	0	0	0	132	144	276
New Hampshire.....	25	76	54	130	1,343	1,837	2,180	1	3	4	115	210	325
Vermont.....	22	54	64	118	1,192	1,155	2,347	0	0	0	130	115	245
Massachusetts.....	80	187	266	453	2,748	2,804	5,552	15	4	19	438	476	914
Rhode Island.....	6	19	24	43	440	296	736	0	0	0	197	143	340
Connecticut.....	38	58	86	144	813	966	1,779	1	4	5	374	565	939
New York.....	178	475	517	992	5,834	5,919	11,753	0	2	2	4,341	4,609	8,950
New Jersey.....	47	146	118	264	2,259	1,213	3,472	3	0	3	825	668	1,493
Pennsylvania.....	93	283	273	556	4,469	3,436	7,905	1	1	2	2,377	1,143	3,520
South Atlantic Division:													
Delaware.....	4	7	6	13	131	147	278	0	0	0	130	115	245
Maryland.....	27	57	61	118	917	624	1,541	0	0	0	356	265	621
District of Columbia....	11	46	43	89	558	447	1,005	0	0	0	161	335	496
Virginia.....	52	106	60	166	1,479	746	2,225	43	55	98	807	1,001	1,808
West Virginia.....	3	5	6	11	102	57	159	0	0	0	58	108	166
North Carolina.....	73	122	111	233	2,218	1,709	3,927	61	111	172	1,245	1,599	2,844
South Carolina.....	32	44	45	89	869	765	1,634	55	41	96	892	987	1,879
Georgia.....	58	66	66	132	1,291	1,144	2,435	75	53	128	1,849	2,375	4,224
Florida.....	7	12	10	22	161	157	318	20	16	36	135	479	614
South Central Division:													
Kentucky.....	42	67	81	148	1,132	1,018	2,150	0	0	0	848	871	1,719
Tennessee.....	69	110	109	219	2,306	2,207	4,513	0	0	0	878	2,090	2,968
Alabama.....	33	47	45	92	851	754	1,605	18	23	41	795	849	1,644
Mississippi.....	53	70	79	149	1,526	1,682	3,208	43	56	99	1,758	1,744	3,502
Louisiana.....	22	18	57	75	350	642	992	35	39	74	344	639	983
Texas.....	42	80	96	176	1,577	1,997	3,574	0	0	0	1,558	1,643	3,201
Arkansas.....	16	28	18	46	513	355	908	12	19	31	450	392	842
Indian Territory.....	5	10	10	20	177	116	293	0	0	0	166	168	334
North Central Division:													
Ohio.....	44	116	96	212	2,809	1,735	4,544	1	0	1	903	948	1,851
Indiana.....	20	29	45	74	463	927	1,390	2	1	3	172	701	873
Illinois.....	41	86	115	201	1,660	2,283	3,943	2	0	2	512	1,117	1,629
Michigan.....	14	24	35	59	392	658	1,050	0	1	1	394	687	1,081
Wisconsin.....	20	57	42	99	642	385	1,027	0	1	1	717	704	1,421
Minnesota.....	18	42	44	86	746	612	1,358	0	1	1	407	326	733
Iowa.....	27	56	50	106	1,411	987	2,398	0	0	0	532	561	1,093
Missouri.....	55	129	122	251	2,164	2,094	4,258	0	0	0	1,149	1,204	2,353
North Dakota.....	2	2	7	9	23	47	70	0	0	0	59	155	214
South Dakota.....	4	7	14	21	70	124	194	0	0	0	81	106	187
Nebraska.....	14	31	42	73	389	502	891	0	0	0	237	271	508
Kansas.....	16	40	30	70	618	585	1,203	2	1	3	244	302	546
Western Division:													
Montana.....	3	0	4	4	0	63	63	0	0	0	38	95	133
Wyoming.....	1	0	3	3	0	37	37	0	0	0	30	52	82
Colorado.....	5	15	18	33	218	209	427	0	0	0	56	133	189
New Mexico.....	3	3	2	5	38	19	57	0	0	0	127	314	441
Arizona.....	11	27	13	40	336	286	622	0	0	0	372	543	915
Utah.....	11	27	13	40	336	286	622	0	0	0	372	543	915
Nevada.....	11	27	13	40	336	286	622	0	0	0	372	543	915
Idaho.....	11	27	13	40	336	286	622	0	0	0	372	543	915
Washington.....	11	19	33	52	227	437	644	0	0	0	102	212	314
Oregon.....	12	25	26	51	327	359	686	0	0	0	285	326	611
California.....	46	94	106	200	1,084	1,257	2,341	1	0	1	1,622	2,292	3,914

TABLE 8.—*Summary of statistics of private secondary schools.*

## STUDENTS AND COURSES OF STUDY.

State.	Students preparing for college.						College preparatory students in graduating class of 1893.			Graduates in class of 1893.		
	Classical course.			Scientific course.								
	Male.	Female.	Total.	Male.	Female.	Total.	Male.	Female.	Total.	Male.	Female.	Total.
United States.....	10,786	4,223	15,009	7,642	2,834	10,476	3,304	1,696	5,000	4,600	3,719	8,319
North Atlantic Division....	5,891	1,380	7,271	3,786	813	4,599	1,653	606	2,259	2,379	1,794	4,173
South Atlantic Division....	1,499	852	2,351	549	313	862	395	223	618	477	356	833
South Central Division....	1,474	869	2,343	1,233	873	2,106	427	330	757	525	605	1,130
North Central Division....	1,542	925	2,467	1,703	709	2,412	704	448	1,152	1,001	776	1,777
Western Division.....	380	197	577	371	126	497	119	89	208	218	188	406
North Atlantic Division:												
Maine.....	337	130	467	58	7	65	65	36	101	129	122	251
New Hampshire.....	530	91	621	242	33	275	31	40	71	148	97	245
Vermont.....	239	95	334	96	49	145	72	47	119	138	123	261
Massachusetts.....	1,013	256	1,269	546	192	738	260	152	412	332	339	671
Rhode Island.....	205	15	220	38	15	53	26	6	32	40	43	83
Connecticut.....	251	87	338	123	14	142	74	15	89	110	113	223
New York.....	1,344	360	1,704	1,084	252	1,336	556	183	739	716	545	1,261
New Jersey.....	684	82	946	482	67	549	262	28	290	353	150	465
Pennsylvania.....	1,108	264	1,372	1,112	184	1,296	313	99	412	431	282	713
South Atlantic Division:												
Delaware.....	26	3	29	8	5	13	7	10	17	10	22	32
Maryland.....	113	7	120	49	107	156	34	10	44	81	36	117
District of Columbia....	73	37	110	37	2	39	56	23	79	62	13	75
Virginia.....	477	55	532	112	27	139	60	34	94	75	87	162
West Virginia.....	5	1	6	0	0	0	0	0	0	0	0	0
North Carolina.....	410	308	718	184	118	302	126	58	184	83	65	148
South Carolina.....	116	96	212	68	28	96	41	31	72	57	54	111
Georgia.....	251	317	568	70	16	86	54	47	101	78	66	144
Florida.....	28	28	56	21	10	31	17	10	27	31	13	44
South Central Division:												
Kentucky.....	272	82	354	181	84	265	83	36	119	90	60	150
Tennessee.....	565	306	871	285	144	429	122	90	212	152	215	367
Alabama.....	167	80	247	123	69	192	23	22	45	28	43	71
Mississippi.....	159	148	307	291	244	535	149	116	265	140	127	267
Louisiana.....	68	92	160	13	25	38	8	29	37	31	42	73
Texas.....	115	96	211	276	270	546	35	32	67	63	101	164
Arkansas.....	85	59	144	54	37	91	4	4	8	17	11	28
Indian Territory.....	13	6	19	10	0	10	3	1	4	4	6	10
North Central Division:												
Ohio.....	319	77	396	305	66	371	160	57	217	273	123	396
Indiana.....	74	150	224	130	14	144	53	66	119	50	64	114
Illinois.....	182	160	342	319	154	473	122	76	198	173	130	303
Michigan.....	45	35	80	94	25	119	36	13	49	51	44	95
Wisconsin.....	58	19	77	52	27	79	34	17	51	66	44	110
Minnesota.....	68	16	84	187	83	270	59	27	86	56	37	93
Iowa.....	139	97	236	123	53	176	65	46	111	91	78	169
Missouri.....	476	263	739	342	148	490	143	106	249	161	155	316
North Dakota.....	5	6	11	10	17	27	1	2	3	1	2	3
South Dakota.....	36	13	49	14	14	28	9	9	18	12	22	34
Nebraska.....	86	68	154	84	28	62	7	17	24	15	35	50
Kansas.....	54	21	75	93	80	173	15	12	27	52	42	94
Western Division:												
Montana.....	0	4	4	2	8	10	.....	.....	.....	0	0	0
Wyoming.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Colorado.....	45	30	75	20	24	44	1	10	11	13	14	27
New Mexico.....	1	0	1	.....	.....	.....	.....	.....	.....	4	0	4
Arizona.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Utah.....	13	5	18	14	1	15	6	11	17	45	40	85
Nevada.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Idaho.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Washington.....	26	23	49	20	8	28	14	4	18	23	24	47
Oregon.....	36	17	53	59	30	89	16	8	24	41	13	54
California.....	259	118	377	256	55	311	82	56	138	92	97	189

TABLE 9.—Summary of statistics of private secondary schools.

## NUMBER OF STUDENTS IN CERTAIN STUDIES.

State.	Latin.			Greek.			French.			German.		
	Male.	Female.	Total.	Male.	Female.	Total.	Male.	Female.	Total.	Male.	Female.	Total.
United States.....	22,146	15,570	37,716	6,911	1,367	8,278	6,713	11,043	17,756	7,956	7,069	15,025
North Atlantic Division....	10,028	6,709	16,737	3,738	699	4,437	4,768	5,991	10,759	4,253	3,850	8,103
South Atlantic Division....	3,972	2,401	6,373	756	67	823	866	1,550	2,416	852	581	1,433
South Central Division....	3,140	2,811	5,941	630	232	862	382	1,005	1,387	336	523	859
North Central Division....	3,988	3,070	7,058	1,380	315	1,695	501	1,842	2,343	2,229	1,670	3,899
Western Division.....	1,018	589	1,607	387	54	441	196	655	851	286	445	731
North Atlantic Division:												
Maine.....	548	434	982	215	70	285	83	161	244	12	19	31
New Hampshire.....	890	365	1,255	402	48	450	309	175	484	106	99	205
Vermont.....	450	352	802	163	48	211	84	129	213	48	98	146
Massachusetts.....	1,638	1,330	2,968	596	231	827	1,244	1,154	2,398	381	632	1,013
Rhode Island.....	227	170	397	98	7	105	137	156	293	19	56	75
Connecticut.....	450	487	937	141	52	193	161	359	520	123	290	413
New York.....	2,587	1,771	4,358	1,110	128	1,238	1,637	2,635	4,272	1,781	1,514	3,295
New Jersey.....	1,280	507	1,787	472	39	511	588	339	927	755	353	1,108
Pennsylvania.....	1,958	1,293	3,251	541	76	617	525	883	1,408	1,028	789	1,817
South Atlantic Division:												
Delaware.....	60	82	142	18	3	21	22	51	73	10	25	35
Maryland.....	490	281	771	109	5	114	195	411	606	387	246	633
District of Columbia.....	252	124	376	68	2	70	57	274	381	38	87	125
Virginia.....	874	348	1,222	134	4	138	236	232	468	247	73	320
West Virginia.....	20	0	20	0	0	0	0	0	0	3	9	12
North Carolina.....	1,101	587	1,688	231	23	254	121	191	312	71	45	116
South Carolina.....	501	269	770	71	7	78	193	176	369	42	65	107
Georgia.....	601	676	1,277	116	22	138	42	202	244	46	29	75
Florida.....	73	34	107	9	1	10	0	13	13	8	2	10
South Central Division:												
Kentucky.....	522	413	935	110	19	129	50	135	185	101	139	240
Tennessee.....	1,021	793	1,814	304	110	414	50	220	270	64	112	176
Alabama.....	384	271	655	78	27	105	22	82	104	34	37	71
Mississippi.....	390	465	855	40	17	57	12	23	35	10	23	33
Louisiana.....	91	138	229	12	2	14	218	404	622	95	33	43
Texas.....	488	541	1,029	55	30	85	25	139	164	95	105	260
Arkansas.....	196	172	368	44	26	70	2	0	2	21	13	34
Indian Territory.....	48	18	66	7	1	8	3	2	5	1	1	2
North Central Division:												
Ohio.....	1,173	527	1,700	421	53	474	132	268	400	556	263	819
Indiana.....	174	336	510	37	44	81	24	196	220	85	138	223
Illinois.....	519	546	1,065	130	42	172	29	526	555	248	318	566
Michigan.....	127	135	262	40	43	83	47	135	182	68	66	134
Wisconsin.....	306	118	424	306	3	309	110	65	175	410	136	546
Minnesota.....	232	173	405	56	12	68	15	78	93	145	137	282
Iowa.....	412	226	638	87	20	107	0	36	36	178	140	318
Missouri.....	745	650	1,395	205	44	249	133	404	537	382	293	675
North Dakota.....	8	6	14	1	0	1	3	8	11	4	8	12
South Dakota.....	42	32	74	13	5	18	0	14	14	14	20	34
Nebraska.....	104	198	302	39	37	76	4	95	99	51	89	140
Kansas.....	146	123	269	45	12	57	4	17	21	88	62	150
Western Division:												
Montana.....	0	3	3	-----	-----	-----	0	12	12	0	6	6
Wyoming.....	0	16	16	-----	-----	-----	-----	-----	-----	-----	-----	-----
Colorado.....	96	46	142	77	7	84	8	26	34	22	28	50
New Mexico.....	10	7	17	1	0	1	2	2	4	-----	-----	-----
Utah.....	65	50	115	23	4	27	5	9	14	50	55	105
Washington.....	111	51	162	77	14	91	16	63	79	35	60	95
Oregon.....	156	137	293	43	14	57	18	52	70	66	85	151
California.....	580	279	859	166	15	181	147	491	638	113	211	324



TABLE 10.—*Summary of statistics of private secondary schools.*

## NUMBER OF STUDENTS IN CERTAIN STUDIES.

State.	Algebra.			Geometry.			Trigonometry.		
	Male.	Female.	Total.	Male.	Female.	Total.	Male.	Female.	Total.
United States.....	23,337	17,769	41,106	11,980	7,607	19,587	3,630	1,909	5,539
North Atlantic Division...	9,453	6,190	15,643	5,588	3,176	8,764	1,508	400	1,908
South Atlantic Division...	3,887	2,662	6,549	1,604	774	2,378	477	207	684
South Central Division...	4,280	4,412	8,692	1,907	1,764	3,671	734	702	1,436
North Central Division...	4,682	3,637	8,319	2,301	1,513	3,814	766	510	1,276
Western Division.....	1,035	868	1,903	580	380	960	145	90	235
North Atlantic Division:									
Maine.....	540	512	1,052	235	207	442	7	7	14
New Hampshire.....	637	319	956	348	193	541	37	30	67
Vermont.....	321	293	614	146	163	309	28	9	37
Massachusetts.....	1,595	1,034	2,629	1,124	600	1,724	540	92	632
Rhode Island.....	241	105	346	155	56	211	27	20	47
Connecticut.....	392	389	781	236	211	447	38	5	43
New York.....	2,703	1,926	4,629	1,690	1,013	2,703	357	118	475
New Jersey.....	1,310	888	1,698	613	149	767	246	44	290
Pennsylvania.....	1,714	1,224	2,938	1,036	584	1,620	228	75	303
South Atlantic Division:									
Delaware.....	63	65	128	21	25	46	5	0	5
Maryland.....	517	345	862	281	83	364	89	23	112
District of Columbia.....	127	175	302	94	72	166	33	9	42
Virginia.....	879	344	1,223	456	91	547	139	37	176
West Virginia.....	17	3	20	6	0	6	2	0	2
North Carolina.....	989	583	1,572	274	134	408	79	42	121
South Carolina.....	474	404	878	136	155	291	28	25	53
Georgia.....	736	674	1,410	297	197	494	69	63	132
Florida.....	85	69	154	39	17	56	33	8	41
South Central Division:									
Kentucky.....	684	474	1,158	395	157	552	182	47	229
Tennessee.....	1,075	1,258	2,333	368	441	809	168	163	331
Alabama.....	496	392	888	194	134	328	76	82	158
Mississippi.....	684	758	1,442	296	288	584	157	160	317
Louisiana.....	122	253	375	61	90	151	27	75	102
Texas.....	850	1,011	1,861	480	540	1,020	98	154	252
Arkansas.....	294	223	517	96	106	202	18	19	37
Indian Territory.....	75	43	118	17	8	25	8	2	10
North Central Division:									
Ohio.....	1,411	641	2,052	551	253	804	277	104	381
Indiana.....	186	297	483	101	134	235	54	71	125
Illinois.....	503	559	1,062	297	262	559	56	92	148
Michigan.....	136	177	313	54	77	131	16	21	37
Wisconsin.....	374	159	533	268	71	339	99	33	132
Minnesota.....	193	157	350	140	60	200	11	0	11
Iowa.....	427	338	765	257	189	437	45	16	61
Missouri.....	1,133	897	2,030	473	313	786	152	126	278
North Dakota.....	15	35	50	3	7	10	3	4	7
South Dakota.....	53	51	104	37	30	67	9	4	13
Nebraska.....	108	215	323	64	86	150	24	34	58
Kansas.....	143	111	254	56	40	96	20	5	25
Western Division:									
Montana.....	0	41	41	0	10	10	0	10	10
Wyoming.....	0	7	7						
Colorado.....	62	54	116	40	31	71	7	0	7
New Mexico.....	17	14	31	14	1	15			
Utah.....	110	80	190	40	29	69	13	1	14
Washington.....	74	76	150	44	33	77	22	11	33
Oregon.....	161	126	287	62	67	129	16	22	38
California.....	611	470	1,081	380	209	589	87	46	133

TABLE 11.—*Summary of statistics of private secondary schools.*

## NUMBER OF STUDENTS IN CERTAIN STUDIES.

State.	Physics.			Chemistry.			General history.		
	Male.	Female.	Total.	Male.	Female.	Total.	Male.	Female.	Total.
United States .....	10,090	8,908	18,998	5,277	4,277	9,554	15,409	15,803	31,212
North Atlantic Division...	4,119	3,159	7,278	2,509	1,602	4,111	6,716	6,600	13,316
South Atlantic Division...	1,454	1,157	2,611	629	528	1,157	2,891	2,118	5,009
South Central Division...	1,939	2,192	4,131	714	895	1,609	2,184	3,009	5,193
North Central Division...	2,102	1,923	4,025	1,203	1,031	2,234	2,780	3,207	5,987
Western Division.....	476	477	953	222	221	443	838	869	1,707
North Atlantic Division:									
Maine.....	247	190	437	91	96	187	225	258	483
New Hampshire.....	265	143	408	165	99	264	217	182	399
Vermont.....	57	129	186	85	61	146	194	189	383
Massachusetts.....	919	506	1,425	668	337	1,005	1,391	1,064	2,455
Rhode Island.....	64	73	137	46	44	90	267	145	412
Connecticut.....	116	174	290	49	72	121	235	428	663
New York.....	1,143	1,104	2,247	543	516	1,059	2,139	2,788	4,877
New Jersey.....	511	185	696	372	88	460	803	449	1,252
Pennsylvania.....	797	655	1,452	490	289	779	1,245	1,147	2,392
South Atlantic Division:									
Delaware.....	15	19	34	17	21	38	31	35	66
Maryland.....	193	205	398	95	53	148	455	372	827
District of Columbia.....	73	60	133	29	48	77	286	247	533
Virginia.....	327	195	522	186	94	280	641	210	851
West Virginia.....	5	7	12	5	0	5	20	13	33
North Carolina.....	405	277	682	158	130	288	783	502	1,285
South Carolina.....	181	178	359	35	88	123	378	257	635
Georgia.....	211	181	392	61	68	129	270	415	685
Florida.....	44	35	79	43	26	69	27	67	94
South Central Division:									
Kentucky.....	280	210	490	151	108	259	424	494	918
Tennessee.....	407	422	829	144	249	393	430	674	1,104
Alabama.....	146	155	301	122	94	216	303	250	553
Mississippi.....	408	471	879	100	100	200	389	446	835
Louisiana.....	39	185	224	39	139	178	162	352	514
Texas.....	554	662	1,216	118	180	298	345	650	995
Arkansas.....	91	74	165	30	29	59	97	110	207
Indian Territory.....	14	13	27	10	5	15	34	33	67
North Central Division:									
Ohio.....	514	315	829	531	178	709	585	398	983
Indiana.....	116	171	287	69	138	207	128	276	404
Illinois.....	235	364	599	82	186	268	302	565	867
Michigan.....	87	106	193	58	78	136	83	205	288
Wisconsin.....	241	84	325	78	39	117	234	158	392
Minnesota.....	96	55	151	49	19	68	162	105	267
Iowa.....	177	143	320	41	62	103	322	184	506
Missouri.....	440	462	902	231	241	472	722	932	1,654
North Dakota.....	13	16	29	4	12	16	11	16	27
South Dakota.....	42	21	63	5	7	12	47	51	98
Nebraska.....	70	115	185	28	49	77	92	232	324
Kansas.....	71	71	142	27	22	49	92	85	177
Western Division:									
Montana.....	0	20	20	-----	-----	-----	0	45	45
Wyoming.....	0	7	7	0	16	16	-----	-----	-----
Colorado.....	37	23	60	13	18	31	67	38	105
New Mexico.....	14	10	24	1	4	5	1	15	16
Utah.....	64	43	107	31	12	43	100	65	165
Washington.....	37	30	67	18	24	42	81	132	213
Oregon.....	64	64	128	35	35	70	130	56	186
California.....	260	280	540	124	112	236	459	518	977

TABLE 12.—*Summary of statistics of private secondary schools.*

## EQUIPMENT AND INCOME.

State.	Number of volumes in libraries.	Value of grounds and buildings, apparatus, etc.	Amount of State or munic- ipal aid.	Income from tuition fees.	Amount from pro- ductive funds.	Total in- come from all sources.
United States .....	1, 219, 118	\$44, 395, 941	\$201, 440	\$4, 586, 530	\$1, 545, 968	\$6, 333, 938
North Atlantic Division....	650, 412	25, 233, 605	43, 221	2, 429, 766	1, 350, 204	3, 823, 191
South Atlantic Division....	118, 070	3, 987, 875	35, 946	370, 205	66, 380	472, 631
South Central Division....	113, 766	3, 208, 450	56, 143	492, 245	35, 020	583, 408
North Central Division....	272, 529	8, 698, 451	63, 130	1, 093, 352	55, 817	1, 125, 299
Western Division.....	64, 341	3, 267, 500	0	290, 862	38, 547	329, 409
North Atlantic Division:						
Maine.....	19, 279	366, 300	12, 010	27, 526	17, 235	56, 771
New Hampshire.....	34, 412	783, 000	800	53, 936	46, 143	100, 879
Vermont.....	23, 030	814, 779	1, 584	47, 680	21, 378	70, 642
Massachusetts.....	103, 208	4, 194, 586	7, 575	440, 918	129, 385	577, 878
Rhode Island.....	12, 000	512, 000	0	49, 120	14, 135	63, 255
Connecticut.....	26, 213	1, 285, 465	1, 750	61, 350	38, 950	102, 050
New York.....	198, 218	8, 159, 184	17, 489	1, 107, 442	65, 818	1, 190, 740
New Jersey.....	31, 450	2, 795, 976	1, 200	300, 307	40, 695	342, 202
Pennsylvania.....	202, 602	6, 322, 375	822	341, 487	976, 465	1, 318, 774
South Atlantic Division:						
Delaware.....	1, 825	135, 000	0	23, 800	10, 250	34, 150
Maryland.....	37, 200	1, 579, 500	8, 800	85, 122	40, 700	134, 622
District of Columbia....	13, 125	400, 000	0	10, 800	7, 500	18, 309
Virginia.....	24, 000	457, 100	650	84, 318	800	85, 768
West Virginia.....	1, 150	7, 400	0	4, 400	0	4, 400
North Carolina.....	24, 361	513, 100	1, 547	85, 437	350	87, 334
South Carolina.....	5, 154	232, 825	7, 639	28, 488	1, 380	37, 493
Georgia.....	8, 015	571, 950	16, 319	38, 115	5, 300	59, 734
Florida.....	3, 200	86, 000	1, 000	9, 830	0	10, 830
South Central Division:						
Kentucky.....	23, 875	431, 300	4, 691	63, 892	2, 300	92, 883
Tennessee.....	23, 868	764, 550	9, 326	153, 372	26, 150	188, 848
Alabama.....	8, 600	291, 700	2, 850	33, 841	0	36, 691
Mississippi.....	15, 900	386, 450	13, 706	72, 199	770	86, 675
Louisiana.....	12, 005	349, 550	0	41, 369	3, 600	44, 969
Texas.....	23, 163	694, 000	7, 510	83, 928	1, 000	92, 438
Arkansas.....	4, 155	163, 600	2, 160	18, 956	1, 200	22, 316
Indian Territory.....	2, 800	127, 300	15, 900	2, 688	0	18, 588
North Central Division:						
Ohio.....	72, 651	1, 180, 024	0	208, 303	17, 050	225, 359
Indiana.....	30, 666	331, 675	8, 330	33, 832	800	42, 962
Illinois.....	51, 700	1, 607, 000	56, 700	152, 280	10, 783	219, 763
Michigan.....	8, 291	672, 667	0	127, 955	1, 120	129, 075
Wisconsin.....	25, 670	860, 000	0	71, 204	1, 380	72, 584
Minnesota.....	10, 565	740, 250	0	114, 173	10, 429	124, 602
Iowa.....	15, 275	38, 000	0	3, 100	0	3, 100
Missouri.....	34, 716	1, 967, 035	1, 100	222, 625	60	223, 185
North Dakota.....	1, 000	25, 000	0	2, 000	0	2, 000
South Dakota.....	2, 100	126, 200	0	8, 383	0	8, 383
Nebraska.....	11, 055	737, 200	0	25, 188	1, 150	26, 338
Kansas.....	8, 900	413, 400	0	34, 909	13, 039	47, 948
Western Division:						
Montana.....	485	7, 000	0	1, 375	0	1, 375
Wyoming.....	300					
Colorado.....	8, 565	384, 000	0	27, 001	250	27, 851
New Mexico.....	1, 600	50, 000	0	500	0	500
Utah.....	7, 525	267, 000	0	25, 596	14, 200	39, 796
Washington.....	7, 687	449, 000	0	38, 801	6, 550	45, 351
Oregon.....	11, 850	359, 000	0	12, 029	17, 547	29, 576
California.....	28, 389	1, 760, 500	0	184, 960	0	184, 960



TABLE 13.—*Condensed statistics of public and private secondary schools.*

Items summarized in the twelve preceding tables.	Statistics of public high schools.	Per cent to total number students in public high schools.	Statistics of private high schools.	Per cent to total number students in private high schools.	Grand total for public and private high schools.
Number of high schools.....	2,812	.....	1,434	.....	4,246
Number of secondary instructors.....	9,489	.....	6,261	.....	15,750
Male teachers.....	4,129	.....	3,038	.....	7,167
Female teachers.....	5,360	.....	3,223	.....	8,583
Number secondary students, total.....	232,951	.....	96,147	.....	329,098
Males.....	93,464	40.1	50,074	52.1	143,538
Females.....	139,487	59.9	46,073	47.9	185,560
Colored students included in totals.....	3,227	1.3	823	.9	4,050
Colored males.....	1,155	.....	391	.....	1,546
Colored females.....	2,071	.....	432	.....	2,503
Number pupils below secondary grades.....	436,855	.....	64,150	.....	501,035
Males.....	209,621	.....	29,398	.....	239,019
Females.....	227,234	.....	34,752	.....	262,016
College preparatory students, classical.....	17,572	7.5	15,009	15.6	32,581
Males.....	8,985	.....	10,786	.....	19,771
Females.....	8,587	.....	4,223	.....	12,810
College preparatory students, scientific.....	16,563	7.1	10,476	10.9	27,039
Males.....	8,521	.....	7,642	.....	16,163
Females.....	8,042	.....	2,834	.....	10,876
Number in graduating classes of 1893.....	29,410	12.6	8,319	8.7	37,729
Males.....	10,256	.....	3,304	.....	13,560
Females.....	19,154	.....	1,696	.....	20,850
College preparatory students in graduating classes, 1893.....	8,815	3.8	5,000	5.2	13,815
Number students studying Latin.....	100,319	43.1	37,716	39.2	138,035
Males.....	39,311	.....	22,146	.....	61,457
Females.....	61,008	.....	15,570	.....	76,578
Number studying Greek.....	7,922	3.4	8,278	8.6	16,200
Males.....	4,872	.....	6,911	.....	11,783
Females.....	3,050	.....	1,367	.....	4,417
Number studying French.....	14,959	6.4	17,756	18.5	32,715
Males.....	5,288	.....	6,713	.....	12,001
Females.....	9,671	.....	11,043	.....	20,714
Number studying German.....	27,760	11.9	15,025	15.6	42,785
Males.....	9,626	.....	7,956	.....	17,582
Females.....	18,134	.....	7,069	.....	25,203
Number studying algebra.....	123,177	52.9	41,106	42.8	164,283
Males.....	49,874	.....	23,337	.....	73,211
Females.....	73,303	.....	17,769	.....	91,072
Number studying geometry.....	60,570	26.0	19,587	20.4	80,157
Males.....	23,603	.....	11,980	.....	35,583
Females.....	36,967	.....	7,607	.....	44,574
Number studying trigonometry.....	6,348	2.7	5,539	5.8	11,887
Males.....	2,897	.....	3,630	.....	6,437
Females.....	3,451	.....	1,909	.....	5,450
Number studying physics.....	54,219	23.3	18,998	19.8	73,217
Males.....	21,517	.....	10,090	.....	31,607
Females.....	32,702	.....	8,908	.....	41,610
Number studying chemistry.....	23,285	9.9	9,554	.9	32,839
Males.....	9,299	.....	5,277	.....	14,576
Females.....	13,986	.....	4,277	.....	18,263
Number studying general history.....	78,917	33.9	31,212	32.4	110,129
Males.....	29,717	.....	15,409	.....	45,126
Females.....	49,200	.....	15,803	.....	65,003

TABLE 14.—Showing the number of denominational schools included in the tables of private secondary schools and academies. (See also Table 15.)

State.	Nonsectarian.			Baptist.			Episcopal.			Lutheran.			Methodist.			M. E. South.		
	Schools.	Instructors.	Students.	Schools.	Instructors.	Students.	Schools.	Instructors.	Students.	Schools.	Instructors.	Students.	Schools.	Instructors.	Students.	Schools.	Instructors.	Students.
United States.....	824	3,494	55,129	59	289	5,092	90	470	4,817	23	90	1,501	49	271	5,071	28	110	2,633
North Atlantic Division.	335	1,748	22,741	22	149	2,641	37	194	1,993	5	30	304	14	141	2,687	...	...	...
South Atlantic Division.	171	543	8,556	14	40	779	13	61	613	5	15	185	13	31	674	6	17	286
South Central Division.	187	560	11,407	12	43	714	6	26	258	1	2	49	15	65	1,181	16	71	1,533
North Central Division.	107	538	11,250	9	48	821	22	120	1,234	12	49	963	6	31	501	6	31	814
Western Division.	24	105	1,175	2	9	137	12	78	719	...	...	...	1	3	28	...	...	...
North Atlantic Division:																		
Maine.....	18	57	1,271	5	26	614	1	3	25	...	...	...	1	11	262	...	...	...
New Hampshire.....	14	85	1,318	4	21	446	2	5	61	...	...	...	...	...	...	...	...	...
Vermont.....	10	47	1,241	2	17	248	2	16	103	...	...	...	2	13	267	...	...	...
Massachusetts.....	63	346	4,036	2	12	219	3	24	247	...	...	...	1	14	209	...	...	...
Rhode Island.....	2	10	151	...	...	...	...	...	...	...	...	...	1	12	211	...	...	...
Connecticut.....	29	110	1,400	...	...	...	6	28	305	...	...	...	...	...	...	...	...	...
New York.....	117	666	7,692	4	28	484	16	94	1,038	3	13	116	5	39	614	...	...	...
New Jersey.....	30	156	1,971	2	30	385	1	2	20	...	...	...	1	14	225	...	...	...
Pennsylvania.....	52	271	3,661	3	15	245	6	22	194	2	17	183	3	38	899	...	...	...
South Atlantic Division:																		
Delaware.....	1	1	23	...	...	...	...	...	...	...	...	...	1	4	127	...	...	...
Maryland.....	17	59	840	...	...	...	3	14	116	1	3	34	...	...	...	...	...	...
District of Columbia.....	6	59	528	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Virginia.....	34	109	1,532	1	4	32	4	14	144	1	2	19	2	5	86	...	...	...
West Virginia.....	1	3	50	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
North Carolina.....	48	155	2,761	1	4	74	5	26	278	3	10	132	6	14	280	2	6	107
South Carolina.....	18	56	1,018	4	8	172	1	7	75	...	...	...	3	7	176	...	...	...
Georgia.....	44	91	1,619	8	24	501	...	...	...	...	...	...	1	1	25	3	9	143
Florida.....	2	10	187	...	...	...	...	...	...	...	...	...	...	...	...	1	2	36
South Central Division:																		
Kentucky.....	22	68	1,017	1	4	46	2	3	69	...	...	...	1	5	53	3	14	252
Tennessee.....	48	147	3,185	4	5	125	1	7	60	...	...	...	6	20	342	7	22	606
Alabama.....	29	77	1,366	...	...	...	1	9	100	1	2	49	...	...	...	...	...	...
Mississippi.....	40	109	2,650	2	6	91	...	...	...	...	...	...	3	8	132	2	9	136
Louisiana.....	12	39	496	1	6	112	1	3	16	...	...	...	1	2	40	...	...	...
Texas.....	25	91	2,063	3	17	273	1	4	13	...	...	...	2	25	529	2	13	327
Arkansas.....	11	29	600	...	...	...	...	...	...	...	...	...	2	5	94	1	6	72
Indian Territory.....	...	...	...	1	5	67	...	...	...	...	...	...	...	...	...	1	7	140
North Central Division:																		
Ohio.....	23	124	3,390	1	5	155	3	26	239	...	...	...	...	...	...	...	...	...
Indiana.....	5	17	400	1	5	103	4	10	119	...	...	...	...	...	...	...	...	...
Illinois.....	16	92	1,824	...	...	...	4	16	179	1	3	100	2	15	216	2	15	335
Michigan.....	6	34	727	...	...	...	1	5	33	...	...	...	1	2	50	...	...	...
Wisconsin.....	4	22	189	...	...	...	4	18	182	1	7	129	1	7	71	...	...	...
Minnesota.....	8	26	576	1	6	187	1	13	162	4	13	240	...	...	...	...	...	...
Iowa.....	9	47	1,397	1	7	140	1	7	50	1	5	145	...	...	...	...	...	...
Missouri.....	32	157	2,510	2	6	82	1	4	32	3	12	214	1	4	151	4	16	470
North Dakota.....	1	5	39	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
South Dakota.....	...	...	...	1	10	79	1	5	60	1	2	39	...	...	...	...	...	...
Nebraska.....	1	8	122	1	7	65	1	10	140	1	7	96	1	3	13	...	...	...
Kansas.....	2	6	136	1	2	10	1	6	38	...	...	...	...	...	...	...	...	...
Western Division:																		
Colorado.....	...	...	...	...	...	...	2	23	154	...	...	...	...	...	...	...	...	...
Utah.....	1	4	35	...	...	...	1	5	33	...	...	...	...	...	...	...	...	...
Washington.....	2	7	63	1	4	101	3	15	126	...	...	...	...	...	...	...	...	...
Oregon.....	3	12	166	...	...	...	2	17	203	...	...	...	...	...	...	...	...	...
California.....	18	82	911	1	5	36	4	18	203	...	...	...	1	3	28	...	...	...

TABLE 15.—*Denominational schools, number of teachers and students. (Continued from Table 14.)*

State.	Friends.			Congrega- tional.			Roman Catholic.			Presbyterian.			Other denomi- nations.		
	Schools.	Instructors.	Students.	Schools.	Instructors.	Students.	Schools.	Instructors.	Students.	Schools.	Instructors.	Students.	Schools.	Instructors.	Students.
United States .....	42	254	3,879	45	160	2,607	173	698	8,513	68	249	4,381	33	152	2,524
North Atlantic Division..	19	155	2,028	16	62	1,103	41	183	2,323	15	73	1,112	14	79	1,207
South Atlantic Division..	3	21	247	1	1	8	19	77	1,142	20	58	873	2	9	159
South Central Division...				4	15	232	25	95	1,100	13	38	629	3	10	140
North Central Division...	20	78	1,604	15	48	741	55	228	3,057	14	59	836	9	31	525
Western Division .....				9	34	523	33	115	891	6	21	931	5	23	493
North Atlantic Division:															
Maine .....				3	14	223	1	3	20						
New Hampshire .....				4	16	316							1	3	39
Vermont .....				4	13	340							2	12	148
Massachusetts .....				4	17	210	3	13	185				4	27	446
Rhode Island .....	1	10	150				2	11	224						
Connecticut .....				1	2	14	2	4	69						
New York .....	4	23	209				25	113	1,417	3	9	131	1	7	52
New Jersey .....	3	9	94				2	4	73	7	44	606	1	5	98
Pennsylvania .....	11	113	1,575				6	35	344	5	20	375	5	25	424
South Atlantic Division:															
Delaware .....	1	5	85							1	3	43			
Maryland .....	1	14	119				5	28	432						
District of Columbia ..							5	30	479						
Virginia .....							2	2	28	7	26	314	1	4	70
West Virginia .....							1	3	20				1	5	89
North Carolina .....	1	2	43	1	1	8				6	15	264			
South Carolina .....							1	2	50	5	9	143			
Georgia .....							1	2	38	1	5	103			
Florida .....							4	10	95						
South Central Division:															
Kentucky .....							6	27	259	6	23	389	1	4	65
Tennessee .....				1	6	67	2	12	128						
Alabama .....				1	2	43	1	2	17						
Mississippi .....							2	5	55	3	8	110	1	4	34
Louisiana .....							7	25	323						
Texas .....							7	24	313	2	2	65			
Arkansas .....				1	4	101							1	2	41
Indian Territory .....				1	3	21				2	5	65			
North Central Division:															
Ohio .....	2	6	114				10	35	508	3	7	84	2	9	74
Indiana .....	4	16	307				5	21	385	1	5	76			
Illinois .....	1	6	196	3	11	229	8	26	600	3	15	217	1	2	47
Michigan .....	1	3	61				4	9	126	1	6	53			
Wisconsin .....				1	4	32	8	36	364	1	5	60			
Minnesota .....				1	4	36	3	24	157						
Iowa .....	5	13	228	2	3	54	5	14	285	1	3	43	2	7	116
Missouri .....				2	9	155	6	31	363	2	6	119	2	6	153
North Dakota .....							1	4	31						
South Dakota .....							1	4	16						
Nebraska .....				4	8	118	3	19	192	1	8	74	1	3	71
Kansas .....	7	34	698	2	9	117	1	5	30	1	4	110	1	4	64
Western Division:															
Montana .....							3	4	63						
Wyoming .....							1	3	37						
Colorado .....				1	3	134	1	5	77	1	2	62			
New Mexico .....				1	1	15	2	4	42						
Utah .....				2	6	80	1	8	77	3	7	114	3	10	283
Washington .....				2	4	57	3	22	317						
Oregon .....				1	7	92	5	12	156				1	3	69
California .....				2	13	145	17	57	122	2	12	755	1	10	141



TABLE 16.—*Number of students in public and private secondary schools reported to the United States Bureau of Education each year since 1871.*

Year reported.	Public.		Private.		Total.	
	Schools.	Students.	Schools.	Students.	Schools.	Students.
1871.....				80,220		80,220
1872.....				98,929		98,929
1873.....				118,570		118,570
1874.....				98,179		98,179
1875.....			1,143	108,235		108,235
1876.....		22,982	1,229	106,647		129,629
1877.....		24,925	1,226	98,371		123,296
1878.....		28,124	1,227	100,374		128,498
1879.....		27,163	1,236	108,734		135,897
1880.....		26,609	1,264	110,277		136,886
1881.....		36,594	1,336	122,617		159,211
1882-83.....	263	39,581	1,482	138,384	1,745	177,965
1883-84.....	266	84,672	1,588	152,354	1,854	187,026
1884-85.....	276	35,707	1,617	160,137	1,893	195,444
1885-86.....	471	70,241	1,440	151,050	1,911	221,291
1886-87.....	515	80,004	550	101,115	1,065	181,119
1887-88.....	684	116,009	673	126,721	1,357	212,730
1888-89.....	* 713	125,512	1,324	146,561	2,037	272,103
1889-90.....	2,526	202,963	1,632	94,931	4,158	297,894
1890-91.....	2,771	211,596	1,714	98,400	4,485	309,996
1891-92.....	3,035	239,556	1,550	100,739	4,585	340,295
1892-93.....	2,812	232,951	1,434	96,147	4,246	329,098

\* From 1876 to 1889 the figures given in the public high school columns apply to city high schools only. From 1890 to 1893, inclusive, all public high schools are included.

TABLE 17.—*Per cent of students pursuing certain studies in the public and private secondary schools.*

Division.	Number of sec- ondary stu- dents.	Per cent of students studying—									
		Latin.	Greek.	French.	German.	Algebra.	Geometry.	Trigonom- etry.	Physics.	Chemistry.	History.
In public high schools in the—											
North Atlantic Division....	79,898	41.12	6.75	13.38	12.15	47.46	26.34	1.91	21.91	10.61	34.28
South Atlantic Division....	11,587	60.68	3.38	5.86	13.26	65.58	30.84	5.44	29.02	8.39	49.08
South Central Division....	13,861	50.87	1.61	2.83	6.02	55.73	30.14	7.24	30.00	10.98	43.79
North Central Division....	115,806	42.38	1.42	2.45	12.53	54.46	23.93	2.55	22.73	9.38	29.39
Western Division.....	11,799	36.55	2.15	3.05	9.96	58.15	34.44	1.96	24.82	12.27	48.58
The United States.....	232,951	43.06	3.40	6.42	11.92	52.88	26.00	2.73	23.27	10.00	33.88
In private high schools in the—											
North Atlantic Division....	38,139	43.88	11.63	28.21	21.25	41.02	22.98	5.00	19.08	10.78	34.91
South Atlantic Division....	13,522	47.13	6.09	17.87	10.60	48.43	17.59	5.06	19.31	8.56	37.04
South Central Division....	17,243	34.45	5.11	8.04	4.98	50.41	21.29	8.33	23.96	9.33	30.12
North Central Division....	22,346	31.59	7.59	10.48	17.45	37.23	17.07	5.71	13.01	10.00	26.79
Western Division.....	4,897	32.82	9.01	17.38	14.93	38.86	19.60	4.80	19.46	9.05	34.86
The United States.....	96,147	39.23	8.61	18.47	15.63	42.75	20.37	5.76	19.76	9.94	32.46
In both public and private high schools in the United States.....	329,098	41.94	4.92	9.94	13.00	49.92	24.36	3.61	22.25	9.98	33.46

## V.—UNIVERSITIES AND COLLEGES.

(See Part IV, Table 6, for detailed statistics.)

The number of coeducational colleges and colleges for men only reporting to the Bureau for the year 1892-93 was 451. This number does not include the purely technical schools, which are entered in a separate table. In order to show the number of coeducational colleges and the number of colleges for men only, together with the number of

students attending each of these two classes of institutions in the several States, the following summarized statement has been prepared:

*Number of colleges for men only, and number of coeducational colleges in the several States.*

States and Territories.	Colleges for males only.		Coeducational colleges.		
	Num-ber.	Male college students.	Num-ber.	College students.	
				Male.	Female.
United States.....	141	20,130	310	(88) 27,317	11,583
North Atlantic Division.....	45	9,763	93	8,155	1,740
South Atlantic Division.....	29	4,692	30	1,088	542
South Central Division.....	26	2,591	48	(75) 2,862	1,158
North Central Division.....	36	3,169	168	13,411	7,178
Western Division.....	5	515	31	(13) 1,801	965
North Atlantic Division:					
Maine.....	1	197	2	256	115
New Hampshire.....	1	350	0	0	0
Vermont.....	0	0	2	244	65
Massachusetts.....	6	3,087	3	358	246
Rhode Island.....	0	0	1	501	48
Connecticut.....	1	122	2	1,795	65
New York.....	16	2,090	7	2,946	624
New Jersey.....	5	1,489	0	0	0
Pennsylvania.....	15	2,428	16	2,055	579
South Atlantic Division:					
Delaware.....	1	90	0	0	0
Maryland.....	6	1,093	4	124	97
District of Columbia.....	1	105	3	252	64
Virginia.....	7	1,090	1	22	18
West Virginia.....	0	0	4	174	79
North Carolina.....	6	854	5	218	111
South Carolina.....	5	418	4	81	14
Georgia.....	3	532	5	149	75
Florida.....	0	0	4	68	84
South Central Division:					
Kentucky.....	6	707	7	542	219
Tennessee.....	7	620	16	1,069	276
Alabama.....	4	527	3	90	68
Mississippi.....	2	143	3	212	68
Louisiana.....	4	423	5	211	118
Texas.....	3	166	8	586	815
Arkansas.....	0	0	5	(75) 152	99
Oklahoma.....	0	0	1	0	0
North Central Division:					
Ohio.....	6	393	32	2,878	1,311
Indiana.....	4	578	11	1,191	585
Illinois.....	6	613	22	2,048	1,107
Michigan.....	1	65	11	1,589	900
Wisconsin.....	4	516	6	944	349
Minnesota.....	4	249	8	942	579
Iowa.....	3	108	21	1,281	832
Missouri.....	5	452	24	1,192	695
North Dakota.....	0	0	4	41	19
South Dakota.....	0	0	6	109	98
Nebraska.....	1	26	8	495	350
Kansas.....	2	164	15	701	364
Western Division:					
Montana.....	0	0	1	19	4
Wyoming.....	0	0	1	19	9
Colorado.....	0	0	4	(13) 122	89
New Mexico.....	0	0	1	0	0
Arizona.....	0	0	1	17	8
Utah.....	0	0	1	71	46
Nevada.....	0	0	1	36	23
Idaho.....	0	0	1	4	2
Washington.....	1	6	4	138	63
Oregon.....	0	0	6	154	129
California.....	4	509	10	1,221	587

Under the head of coeducational colleges have been included all institutions in which either the undergraduate department, the graduate department, or both, are open to both men and women. It will be seen from the table that 310 institutions (68.7 per cent of the total number)

are open to women. In 1890-91 of a total number of 430 institutions only 282, or 65.6 per cent, were open to women, showing a gain in two years of a little more than 3 per cent. These two years witnessed the admission of women to certain privileges in Yale and Brown universities, while Tufts College and Miami University were entirely thrown open to them.

*Professors and instructors.*—The number of professors and instructors, male and female, employed in the several departments of universities and colleges is shown in the following summary:

*Universities and colleges for 1892-93—Summary of professors and instructors.*

States and Territories.	Number of institutions.	Preparatory departments.		Collegiate departments.		Professional departments.		Total number.	
		Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.
United States .....	451	1,803	737	5,120	559	2,654	26	8,833	1,364
North Atlantic Division .....	78	309	44	1,648	48	937	1	2,779	74
South Atlantic Division .....	59	212	84	607	52	215	0	953	145
South Central Division .....	74	198	117	506	84	262	0	903	235
North Central Division .....	204	966	429	2,022	320	989	24	3,590	730
Western Division .....	36	118	63	337	55	251	1	659	120
<b>North Atlantic Division:</b>									
Maine .....	3	0	0	38	0	13	0	50	0
New Hampshire .....	1	0	0	34	0	16	0	50	0
Vermont .....	2	0	0	33	0	22	0	55	0
Massachusetts .....	9	29	2	284	3	241	1	549	4
Rhode Island .....	1	0	0	58	0	0	0	58	0
Connecticut .....	3	0	0	146	0	79	0	222	0
New York .....	23	152	13	540	10	301	0	945	21
New Jersey .....	5	22	4	117	0	5	0	136	4
Pennsylvania .....	31	106	25	398	35	260	0	698	45
<b>South Atlantic Division:</b>									
Delaware .....	1	0	0	13	0	0	0	13	0
Maryland .....	10	62	9	161	15	.....	.....	181	20
District of Columbia .....	4	31	2	78	2	146	0	284	10
Virginia .....	8	20	3	88	6	16	0	128	9
West Virginia .....	4	3	2	29	4	2	0	33	5
North Carolina .....	11	24	10	93	9	26	0	135	29
South Carolina .....	9	35	16	63	2	6	0	87	20
Georgia .....	8	20	14	56	5	19	0	80	26
Florida .....	4	11	19	16	9	0	0	17	26
<b>South Central Division:</b>									
Kentucky .....	13	33	12	83	15	21	0	128	29
Tennessee .....	23	61	44	169	20	156	0	354	70
Alabama .....	7	6	7	45	1	6	0	59	10
Mississippi .....	5	15	4	32	6	5	0	48	10
Louisiana .....	9	39	22	79	18	51	0	169	53
Texas .....	11	29	20	73	7	23	0	129	45
Arkansas .....	5	11	8	21	7	.....	.....	29	17
Oklahoma .....	1	4	.....	4	.....	.....	.....	5	1
<b>North Central Division:</b>									
Ohio .....	38	195	64	363	51	201	0	722	134
Indiana .....	15	72	16	173	15	47	1	289	45
Illinois .....	28	159	65	369	52	257	19	691	118
Michigan .....	12	56	27	165	28	55	0	239	73
Wisconsin .....	10	34	14	120	15	17	0	163	24
Minnesota .....	12	38	13	139	16	105	2	249	29
Iowa .....	24	109	70	177	47	111	2	334	112
Missouri .....	29	98	71	223	38	92	0	421	113
North Dakota .....	4	21	11	18	5	3	0	31	13
South Dakota .....	6	35	23	32	16	0	0	43	42
Nebraska .....	9	55	21	84	12	83	0	190	29
Kansas .....	17	94	34	140	25	13	0	213	58
<b>Western Division:</b>									
Montana .....	1	3	1	4	.....	.....	.....	7	1
Wyoming .....	1	6	1	12	1	.....	.....	12	2
Colorado .....	4	13	6	49	7	98	0	137	15
New Mexico .....	1	3	4	.....	.....	.....	.....	3	4
Arizona .....	1	2	0	10	0	.....	.....	10	0
Utah .....	1	10	1	12	0	.....	.....	16	1
Nevada .....	1	4	2	11	0	.....	.....	15	2
Idaho .....	1	4	2	4	2	.....	.....	4	2
Washington .....	5	8	7	17	14	1	0	23	17
Oregon .....	6	15	10	24	8	65	0	99	24
California .....	14	50	29	203	23	87	1	333	52



The foregoing table shows that the proportion of women professors and instructors remains low; especially is this true of the college and professional departments. The largest proportion of women professors is found in the North Central and Western divisions of the country, while the smallest proportion is found in the North Atlantic Division. Taking the total number of students enrolled in the collegiate and graduate departments of the universities and colleges of the entire country, we find that the proportion of students to instructors is 10.4 students to 1 instructor.

In 1890-91 the total number of professors and instructors in all departments reported by 430 institutions was 8,472, while in 1892-93 the number reported by 451 institutions was 10,247. Among the institutions reporting in the latter year and which were not included in 1890-91 is the University of Chicago, with 135 professors and instructors.

*Students.*—The number of students enrolled in the several departments of the universities and colleges, classified according to race and sex, is given in the following summarized tables:

*Universities and colleges for 1892-93—Summary of students.*

States and Territories.	Preparatory departments.						Collegiate departments.					
	White.		Colored.		Total.		White.		Colored.		Total.	
	Male.	Fe- male.	Male	Fe- male.	Male.	Fe- male.	Male.	Fe- male.	Male	Fe- male.	Male.	Fe- male.
United States.....	(73) 28,519	11,850	(207)1	1,541	(73) 30,590	13,391	(83) 43,803	11,017	563	82	(88) 44,366	11,099
North Atlantic Division..	4,803	618	69	1	4,872	619	16,251	1,586	153	2	16,404	1,588
South Atlantic Division..	2,285	681	1,022	648	3,307	1,329	4,581	510	204	31	4,785	541
South Central Division..	(56) 3,894	1,488	868	820	(56) 4,762	2,308	(75) 5,160	1,111	153	34	(75) 5,312	1,145
North Central Division..	15,628	7,993	107	72	15,735	8,065	15,607	6,880	52	15	15,659	6,895
Western Division.....	(17) 1,909	1,070	5	0	(17) 1,914	1,070	(13) 2,204	930	1	0	(13) 2,205	930
North Atlantic Division:												
Maine.....	0	0	0	0	0	0	453	115	0	0	453	115
New Hampshire.....	0	0	0	0	0	0	349	0	0	0	349	0
Vermont.....	0	0	0	0	0	0	244	65	0	0	244	65
Massachusetts.....	433	6	0	0	433	6	3,083	207	2	0	3,085	207
Rhode Island.....	0	0	0	0	0	0	422	39	0	0	422	39
Connecticut.....	0	0	0	0	0	0	1,782	36	2	0	1,784	36
New York.....	2,779	242	1	0	2,780	242	4,453	569	2	0	4,455	569
New Jersey.....	229	22	1	0	230	22	1,371	0	0	0	1,371	0
Pennsylvania.....	1,362	348	67	1	1,429	349	4,094	555	147	2	4,241	557
South Atlantic Division:												
Delaware.....	0	0	0	0	0	0	90	0	0	0	90	0
Maryland.....	597	105	131	71	728	176	767	96	13	1	780	97
District of Columbia....	266	4	54	8	320	12	324	59	29	4	353	63
Virginia.....	279	22	0	0	279	22	1,105	18	0	0	1,105	18
West Virginia.....	218	69	1	0	219	69	172	79	0	0	172	79
North Carolina.....	186	134	358	212	554	346	940	93	165	18	1,045	111
South Carolina.....	157	26	401	244	558	270	465	11	28	3	493	14
Georgia.....	370	117	77	113	447	230	650	70	29	5	679	75
Florida.....	202	204	0	0	202	204	68	84	0	0	68	84
South Central Division:												
Kentucky.....	649	216	76	85	725	301	1,235	214	9	5	1,244	219
Tennessee.....	1,331	547	310	331	1,641	878	1,516	261	112	12	1,628	273
Alabama.....	203	121	75	104	278	225	608	66	3	2	611	68
Mississippi.....	287	43	9	6	296	49	326	58	6	4	332	62
Louisiana.....	589	96	65	28	615	124	595	104	9	5	604	109
Texas.....	642	340	234	212	876	552	738	312	4	3	742	315
Arkansas.....	(56) 141	65	99	54	(56) 240	119	(75) 142	96	10	3	(75) 152	99
Oklahoma.....	61	60	0	0	61	60						
North Central Division:												
Ohio.....	3,185	1,355	90	69	3,275	1,424	2,948	1,271	31	7	2,979	1,278
Indiana.....	1,029	309	1	1	1,030	310	1,709	562	5	0	1,714	562
Illinois.....	2,662	1,150	6	0	2,668	1,150	2,416	1,020	1	2	2,417	1,022
Michigan.....	965	487	2	0	967	487	1,569	857	4	2	1,573	859
Wisconsin.....	567	198	0	0	567	198	1,382	326	1	0	1,383	326
Minnesota.....	668	243	0	0	668	243	1,119	541	0	1	1,119	542
Iowa.....	1,582	1,306	4	2	1,586	1,308	1,800	806	1	0	1,806	806
Missouri.....	2,528	1,342	0	0	2,528	1,342	1,589	687	0	0	1,589	687
North Dakota.....	200	198	0	0	200	198	41	19	0	0	41	19
South Dakota.....	289	284	0	0	289	284	109	94	0	0	109	94
Nebraska.....	769	477	1	0	770	477	524	349	3	0	527	349
Kansas.....	1,184	644	3	0	1,187	644	841	348	6	3	847	351
Western Division:												
Montana.....	30	31	0	0	30	31	19	4	0	0	19	4
Wyoming.....	16	20	0	0	16	20	18	9	0	0	18	9
Colorado.....	(17) 162	140	1	0	(17) 163	140	(13) 113	87	0	0	(13) 113	87
New Mexico.....	7	10	0	0	7	10						
Arizona.....	9	4	0	0	9	4	17	8	0	0	17	8
Utah.....	116	135	0	0	116	135	66	46	0	0	66	46
Nevada.....	45	77	0	0	45	77	34	28	0	0	34	28
Idaho.....	84	45	0	0	84	45	4	2	0	0	4	2
Washington.....	164	85	0	0	164	85	142	62	0	0	142	62
Oregon.....	293	236	4	0	297	236	154	129	0	0	154	129
California.....	983	287	0	0	983	287	1,637	555	1	0	1,638	555

## Universities and colleges for 1892-93.—Summary of students—Continued.

States and Territories.	Professional departments.						Graduate departments.									
	White.		Col- ored.		Total.		Resident.						Nonresident.			
							White.		Col- ored.		Total.		White.		Col- ored.	
	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.
United States.....	(16) 17,950	716	633	10	(16) 18,643	726	2,233	390	2	0	2,235	390	844	94	2	0
North Atlantic Division.	6,096	183	40	0	6,136	183	1,163	134	0	0	1,163	134	349	18	2	0
South Atlantic Division.	1,708	19	330	2	2,038	21	381	1	0	0	381	1	14	0	0	0
South Central Division.	2,207	3	299	7	2,506	10	102	8	1	0	103	8	37	5	0	0
North Central Division.	7,184	455	24	0	7,208	455	498	212	1	0	499	212	422	71	0	0
Western Division.....	(16) 753	51	0	1	(16) 755	52	89	35	0	0	89	35	22	0	0	0
North Atlantic Division:																
Maine.....	100	0	0	0	100	0	0	0	0	0	0	0	0	0	0	0
New Hampshire.....	103	0	0	0	103	0	1	0	0	0	1	0	0	0	0	0
Vermont.....	183	0	2	0	190	0	0	0	0	0	0	0	0	0	0	0
Massachusetts.....	1,457	75	6	0	1,463	75	337	39	0	0	337	39	23	0	0	0
Rhode Island.....	0	0	0	0	0	0	40	9	0	0	40	9	39	0	0	0
Connecticut.....	348	0	8	0	356	0	112	26	0	0	112	26	21	1	0	0
New York.....	2,151	103	2	0	2,153	103	446	40	0	0	446	40	133	15	2	0
New Jersey.....	38	0	0	0	38	0	108	0	0	0	108	0	10	0	0	0
Pennsylvania.....	1,706	5	22	0	1,728	5	119	20	0	0	119	20	123	2	0	0
South Atlantic Division:																
Delaware.....	39	0	0	0	48	0	347	0	0	0	347	0	0	0	0	0
Maryland.....	995	18	190	2	1,185	20	4	1	0	0	4	1	0	0	0	0
District of Columbia.....	377	0	0	0	377	0	7	0	0	0	7	0	0	0	0	0
Virginia.....	75	1	0	0	75	1	2	0	0	0	2	0	0	0	0	0
West Virginia.....	98	0	130	0	228	0	17	0	0	0	17	0	10	0	0	0
North Carolina.....	22	0	1	0	23	0	2	0	0	0	2	0	4	0	0	0
South Carolina.....	102	0	0	0	102	0	2	0	0	0	2	0	0	0	0	0
Georgia.....	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Florida.....	341	1	0	0	341	1	3	0	0	0	3	0	2	0	0	0
South Central Division:																
Kentucky.....	1,158	0	209	7	1,367	7	49	3	0	0	49	3	12	0	0	0
Tennessee.....	42	0	6	0	48	0	5	0	0	0	5	0	1	0	0	0
Alabama.....	23	0	0	0	23	0	8	1	1	0	9	1	19	5	0	0
Mississippi.....	488	0	33	0	521	0	27	4	0	0	27	4	3	0	0	0
Louisiana.....	155	2	4	0	159	2	10	0	0	0	10	0	0	0	0	0
Texas.....	0	0	47	0	47	0	0	0	0	0	0	0	0	0	0	0
Arkansas.....																
Oklahoma.....																
North Central Division:																
Ohio.....	1,323	14	12	0	1,335	14	44	20	1	0	45	20	247	13	0	0
Indiana.....	377	41	2	0	379	41	27	16	0	0	27	16	23	7	0	0
Illinois.....	1,557	175	5	0	1,562	175	191	77	0	0	191	77	53	8	0	0
Michigan.....	1,273	109	0	0	1,273	109	43	25	0	0	43	25	38	16	0	0
Wisconsin.....	371	4	1	0	372	4	52	11	0	0	52	11	25	12	0	0
Minnesota.....	614	25	1	0	615	25	53	25	0	0	53	25	19	3	0	0
Iowa.....	865	71	0	0	865	71	25	22	0	0	25	22	3	4	0	0
Missouri.....	474	0	0	0	474	0	52	8	0	0	52	8	3	0	0	0
North Dakota.....	3	0	0	0	3	0										
South Dakota.....							2	0	0	0	2	0				
Nebraska.....	198	10	0	0	198	10	2	1	0	0	2	1	2	0	0	0
Kansas.....	129	6	3	0	132	6	9	5	0	0	9	5	5	0	0	0
Western Division:																
Montana.....																
Wyoming.....							1	0	0	0	1	0				
Colorado.....	(16) 173	20	0	1	(16) 173	21	3	2	0	0	3	2	6	0	0	0
New Mexico.....																
Arizona.....							5	0	0	0	5	0				
Utah.....							2	0	0	0	2	0				
Nevada.....																
Idaho.....																
Washington.....	4	0	0	0	4	0	0	1	0	0	0	1	2	0	0	0
Oregon.....	121	5	0	0	121	5										
California.....	457	26	0	0	457	26	78	32	0	0	78	32	14	0	0	0



*Universities and colleges for 1892-93.—Summary of students—Continued.*

States and Territories.	Total number.					
	White.		Colored.		Total.	
	Male.	Female.	Male.	Female.	Male.	Female.
United States.....	(2,776) 99,839	29,557	4,508	3,373	(2,776) 104,347	32,930
North Atlantic Division.....	29,368	2,593	264	3	29,632	2,602
South Atlantic Division.....	8,967	1,360	1,954	1,156	10,921	2,516
South Central Division.....	(692) 12,160	2,850	2,080	2,093	(692) 14,240	4,943
North Central Division.....	(2,036) 43,928	20,128	204	119	(2,036) 44,132	20,247
Western Division.....	(48) 5,416	2,620	6	2	(48) 5,422	2,622
North Atlantic Division:						
Maine.....	553	115	0	0	553	115
New Hampshire.....	458	0	0	0	458	0
Vermont.....	432	65	2	0	434	65
Massachusetts.....	5,454	327	8	0	5,462	327
Rhode Island.....	501	48	0	0	501	48
Connecticut.....	2,286	83	10	0	2,296	83
New York.....	10,065	942	7	0	10,072	942
New Jersey.....	1,779	22	1	0	1,780	22
Pennsylvania.....	7,840	997	236	3	8,076	1,000
South Atlantic Division:						
Delaware.....	90	0	0	0	90	0
Maryland.....	1,753	206	153	72	1,906	278
District of Columbia.....	1,597	87	387	93	1,984	180
Virginia.....	1,719	40	0	0	1,719	40
West Virginia.....	464	148	1	0	465	148
North Carolina.....	1,257	227	569	247	1,826	474
South Carolina.....	646	37	612	418	1,258	455
Georgia.....	1,165	310	232	326	1,397	645
Florida.....	276	296	0	0	276	296
South Central Division:						
Kentucky.....	2,944	476	85	97	3,029	573
Tennessee.....	(145) 4,058	847	636	473	(145) 4,094	1,320
Alabama.....	848	188	109	138	957	326
Mississippi.....	646	107	106	127	752	234
Louisiana.....	1,682	204	492	722	2,174	926
Texas.....	(547) 1,582	736	333	315	(547) 1,915	1,051
Arkansas.....	339	232	319	221	653	453
Oklahoma.....	61	60	0	0	61	60
North Central Division:						
Ohio.....	(289) 8,447	3,862	151	105	(289) 8,598	3,967
Indiana.....	(22) 3,259	1,149	8	1	(22) 3,267	1,150
Illinois.....	(128) 8,444	2,960	12	2	(128) 8,456	2,962
Michigan.....	(145) 4,290	1,987	8	4	(145) 4,293	1,991
Wisconsin.....	2,472	674	2	0	2,474	674
Minnesota.....	2,568	961	1	1	2,569	962
Iowa.....	(1,184) 3,990	2,413	5	2	(1,184) 3,995	2,415
Missouri.....	5,097	2,470	0	0	5,097	2,479
North Dakota.....	280	237	0	0	280	237
South Dakota.....	561	509	0	0	561	509
Nebraska.....	1,578	978	4	0	1,582	978
Kansas.....	(268) 2,942	1,859	13	4	(268) 2,955	1,863
Western Division:						
Montana.....	49	35	0	0	49	35
Wyoming.....	53	54	0	1	53	55
Colorado.....	(48) 657	388	1	1	(48) 658	389
New Mexico.....	54	54	0	0	54	54
Arizona.....	26	12	0	0	26	12
Utah.....	187	181	0	0	187	181
Nevada.....	81	105	0	0	81	105
Idaho.....	83	47	0	0	83	47
Washington.....	432	198	0	0	432	193
Oregon.....	583	525	4	0	587	525
California.....	3,206	1,021	1	0	3,207	1,021

The foregoing tables show that the total number of students in attendance upon all the courses of the several institutions was 140,053. Of this number 23.5 per cent were women, and 5.6 per cent were colored. In the undergraduate departments there were enrolled 55,553 students. Women comprised almost 20 per cent of this number, while the proportion of colored students was small; only 1.5 per cent of the total number belonging to the colored race. In the preparatory departments these two classes of students make a much better showing.

Of the 41,054 students enrolled in the preparatory departments, 30.4 per cent were women, and 8.2 per cent were colored. It would naturally be expected that the proportion of colored students would be considerably larger in the preparatory departments than in the other departments of the several institutions. The professional departments claimed 19,385 students, of which number 3.7 per cent were women and 3.6 per cent were colored.

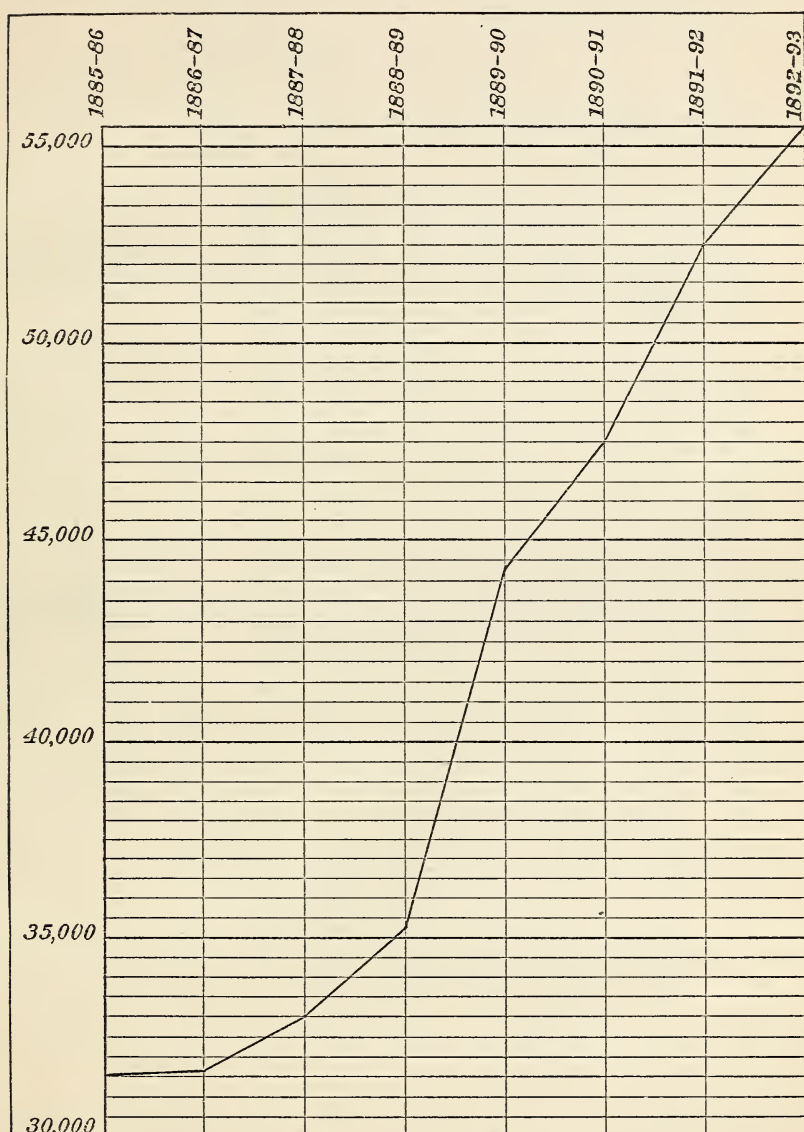
The diagram shown on p. 77 shows the number of students in attendance on the undergraduate courses of the universities and colleges as reported to this office for the years 1885-86 to 1892-93, inclusive.

The graduate students pursuing advanced liberal studies have been classified as resident and nonresident students. The number of resident graduates for the year under consideration was 2,625, while the number of nonresident graduates was 940. Of the former number, 14.9 per cent were women, while of the latter number but 10 per cent were women. The greatest number of nonresident graduates is found in the North Central Division of the country. In this section as well as in the North Atlantic Division there are several institutions in which the nonresident graduate departments are important features of the institutions.

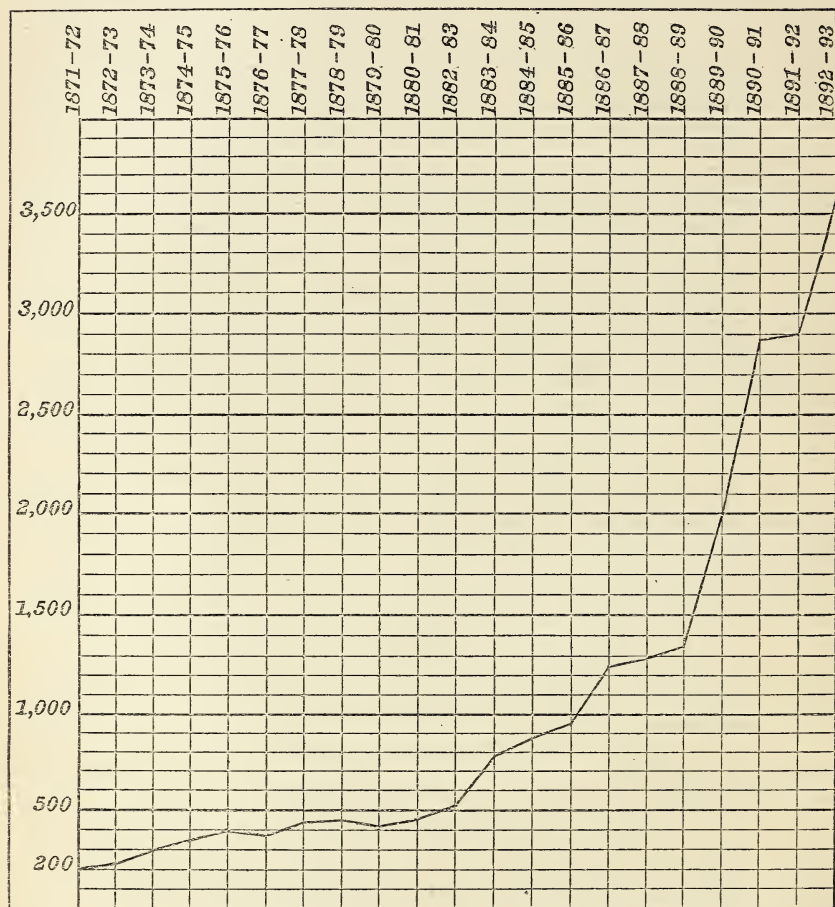
The growth of graduate work in the United States from 1871-72 to 1892-93 is set forth in the diagram shown on p. 78.

In this diagram are included only such graduate students as are pursuing what are generally known as liberal studies, graduate students pursuing professional courses of study being excluded.

*Undergraduate students in universities and colleges from 1885-86 to 1892-93.*





*Graduate students in universities and colleges from 1871-72 to 1892-93.*

The following table shows the percentage of college students in the several degree courses reported by 361 universities and colleges:

*Universities and colleges for 1892-93.*

UNDERGRADUATE STUDENTS IN DEGREE COURSES.

States and Territories.	Number of institutions reporting classification of students.	Number of students in degree courses.	Per cent of students in degree courses pursuing courses of study leading to—					
			A. B. degree.	Ph. B. degree.	B. L. degree.	B. S. degree.	B. C. E. degree.	Other first degrees.
United States.....	361	41,978	55.70	9.21	7.16	20.93	2.66	4.34
North Atlantic Division.....	68	15,970	61.97	8.12	2.88	15.00	4.54	7.49
South Atlantic Division.....	45	3,279	79.44	3.63	2.35	10.95	2.44	1.19
South Central Division.....	50	3,813	50.72	2.86	8.71	34.69	1.68	1.94
North Central Division.....	165	16,639	46.00	12.54	11.85	25.45	1.39	2.77
Western Division.....	33	2,277	56.79	11.15	7.29	21.91	.66	2.20
North Atlantic Division:								
Maine.....	3	547	100.00					
New Hampshire.....	1	320	55.00		18.44	24.06	2.50	
Vermont.....	2	295	47.46	16.95		14.91	13.56	7.12
Massachusetts.....	8	3,054	87.66	.69		9.56	2.09	
Rhode Island.....	1	297	65.99	29.29	0	0	4.72	0
Connecticut.....	3	1,811	67.59	29.76	.05	2.00		
New York.....	21	4,554	37.66	7.53	7.44	19.32	6.60	22.05
New Jersey.....	3	1,160	63.80			22.50	11.72	1.93
Pennsylvania.....	26	3,932	63.12	6.54	1.55	20.19	4.81	3.79
South Atlantic Division:								
Delaware.....	1	85	60.00			4.71	23.53	11.76
Maryland.....	8	526	91.25	.19	2.28	6.28		
District of Columbia.....	4	284	81.69			8.45	6.69	3.17
Virginia.....	4	559	99.64					.36
West Virginia.....	3	80	50.00		6.25	22.50	13.75	7.50
North Carolina.....	7	670	61.94	11.64	4.48	18.66	1.49	1.79
South Carolina.....	7	388	85.05	2.84		12.11		
Georgia.....	7	608	77.80	4.77		14.14	3.29	
Florida.....	4	79	34.18		37.97	27.85		
South Central Division:								
Kentucky.....	7	526	47.53	3.80	15.78	32.13	.76	
Tennessee.....	17	1,106	48.46	3.80	2.44	37.97	3.62	3.71
Alabama.....	7	581	50.04	6.71	3.27	27.19	3.27	.52
Mississippi.....	3	292	40.75	1.03		58.22		
Louisiana.....	9	689	54.57	.58	8.27	32.22		4.36
Texas.....	7	619	50.68	.16	23.59	26.01	.16	
North Central Division:								
Ohio.....	31	3,224	51.30	14.45	12.19	13.74	2.33	5.99
Indiana.....	12	1,991	54.49	14.42	4.82	24.91	1.36	
Illinois.....	26	2,963	41.41	10.56	9.42	38.37		.24
Michigan.....	6	1,647	29.87	19.31	18.64	31.27		.91
Wisconsin.....	9	1,487	33.56	2.29	36.31	14.66	3.83	9.25
Minnesota.....	9	916	37.55		22.05	27.51	3.06	9.83
Iowa.....	21	1,760	35.91	28.24	2.39	30.79	2.50	.17
Missouri.....	22	1,348	60.83	7.79	3.49	26.86	.07	.96
North Dakota.....	3	49	55.10	2.04	4.08	38.78		
South Dakota.....	6	199	57.29	7.54	4.52	30.65		
Nebraska.....	7	208	49.52	1.92	9.14	39.42		
Kansas.....	13	847	77.57	5.55	4.13	12.75		
Western Division:								
Montana.....	1	23	13.04					86.96
Wyoming.....	1	27	14.81		25.93	25.93		33.33
Colorado.....	4	142	35.21	23.24	16.90	24.65		
Arizona.....	1	22				100.00		
Utah.....	1	49	12.25		8.16	48.98		29.61
Nevada.....	1	60	63.33			36.67		
Idaho.....	1	6				83.33	16.67	
Washington.....	4	90	50.00		1.11	48.89		
Oregon.....	6	185	69.73		7.57	22.70		
California.....	13	1,673	60.85	13.21	6.93	17.81	.84	.36

For a number of years the percentage of students in the classical or A. B. course has been decreasing, while the percentage of students in courses leading to the science degrees has been increasing.

*Preparation of students.*—Another attempt was made during the year to ascertain the kinds of schools in which the several freshmen students

of the year were prepared for college. Not much success has attended the efforts of the Bureau in this direction, as answers to this inquiry were received from but 216 of the 451 institutions to which the inquiry was directed. The results of this investigation have been incorporated in the following table:

*Universities and colleges for 1892-93.*

PREPARATION OF FRESHMEN.

States and Territories.	No. of institutions reporting.	No. of freshmen.	Per cent of freshmen prepared in preparatory departments of colleges.	Per cent of freshmen prepared in private secondary schools.	Per cent of freshmen prepared in public high schools.	Per cent of freshmen prepared by private study.
United States.....	216	8, 273	39. 28	21. 59	36. 26	2. 87
North Atlantic Division.....	42	2, 784	17. 96	35. 31	42. 49	4. 24
South Atlantic Division.....	28	582	51. 03	32. 82	13. 74	2. 41
South Central Division.....	26	847	57. 97	21. 37	16. 41	4. 25
North Central Division.....	99	3, 359	52. 28	11. 13	35. 04	1. 55
Western Division.....	21	701	29. 39	8. 13	60. 06	2. 42
North Atlantic Division:						
Maine.....	3	169	10. 65	28. 99	44. 97	15. 39
New Hampshire.....	1	168	1. 19	27. 38	70. 24	1. 19
Vermont.....	2	100	0	19. 60	79. 00	2. 00
Massachusetts.....	4	520	3. 65	51. 16	44. 04	1. 15
Rhode Island.....	1	118	6. 78	52. 54	40. 68	.....
Connecticut.....	1	90	3. 33	63. 34	30. 00	3. 33
New York.....	13	826	18. 28	25. 91	53. 87	1. 94
New Jersey.....	1	93	23. 66	27. 96	46. 23	2. 15
Pennsylvania.....	16	700	39. 57	34. 86	16. 86	8. 71
South Atlantic Division:						
Delaware.....	1	27	3. 70	44. 45	29. 63	22. 22
Maryland.....	5	103	61. 17	7. 77	26. 21	4. 85
District of Columbia.....	2	28	78. 57	17. 86	0	3. 57
Virginia.....	3	43	100. 00	.....	.....	.....
West Virginia.....	2	14	100. 00	.....	.....	.....
North Carolina.....	5	178	35. 39	48. 88	14. 61	1. 12
South Carolina.....	5	73	43. 83	30. 14	26. 03	.....
Georgia.....	4	114	50. 00	50. 00	.....	.....
Florida.....	1	2	100. 00	.....	.....	.....
South Central Division:						
Kentucky.....	5	175	55. 43	19. 43	12. 57	12. 57
Tennessee.....	8	238	51. 68	31. 09	15. 55	1. 68
Alabama.....	1	5	100. 00	.....	.....	.....
Mississippi.....	3	137	58. 60	32. 48	8. 92	.....
Louisiana.....	4	101	64. 36	20. 79	14. 85	.....
Texas.....	5	171	63. 74	. 59	29. 82	5. 85
North Central Division:						
Ohio.....	14	493	46. 45	7. 10	44. 22	2. 23
Indiana.....	8	410	37. 56	5. 37	52. 68	4. 39
Illinois.....	21	1, 091	51. 15	17. 41	30. 84	1. 10
Michigan.....	4	127	59. 84	.....	40. 16	.....
Wisconsin.....	5	95	78. 95	6. 32	12. 63	2. 10
Minnesota.....	5	101	50. 50	8. 91	40. 59	.....
Iowa.....	11	334	43. 11	12. 88	43. 41	. 60
Missouri.....	15	380	64. 21	11. 84	28. 42	. 53
North Dakota.....	2	25	56. 00	12. 00	16. 00	16. 00
South Dakota.....	3	109	71. 56	10. 09	18. 35	.....
Nebraska.....	4	57	61. 40	.....	33. 60	.....
Kansas.....	7	137	71. 53	7. 30	20. 44	. 73
Western Division:						
Montana.....	1	12	100. 00	.....	.....	.....
Wyoming.....	1	17	100. 00	.....	.....	.....
Colorado.....	2	24	45. 83	16. 67	37. 50	.....
Arizona.....	1	38	23. 95	.....	57. 90	13. 15
Utah.....	1	16	100. 00	.....	.....	.....
Nevada.....	1	29	17. 24	3. 45	68. 97	10. 34
Idaho.....	1	6	66. 67	.....	33. 33	.....
Washington.....	3	40	100. 00	.....	.....	.....
Oregon.....	4	33	100. 00	.....	.....	.....
California.....	6	486	11. 73	10. 70	75. 72	1. 85

*Degrees.*—The number of different degrees, excluding purely professional degrees, conferred on examination or in course by the several universities and colleges is given in the following table:



## Universities and colleges for 1892-93.

## DEGREES CONFERRED (EXCLUDING PROFESSIONAL DEGREES).

States and Territories.	A. B.	A. M.	B. S.	M. S.	Sc. D.	Ph. B.	Ph. M.	Ph. D.	B. L.	M. L.	Litt. D.	B. M. E., M. E., and M. C. E.	B. E. E. and B. E. C. E.	E. M.	D. Arch.	P. C.	B. Paint.	B. Elec.	B. Ped.	M. Ped.	Ped. D.	Mus. B.	Mus. M.	D. Agr.	A. M. B.	
United States.....	4,061	802	1,153	97	6	707	77	189	443	13	1	140	179	42	11	13	2	6	1	42	22	7	46	1	11	12
North Atlantic Division.....	1,946	415	345	37	3	286	10	110	66	4	1	125	104	18	4	12	2	6	...	21	7	11	...	6	12	
South Atlantic Division.....	471	76	61	1	1	21	...	32	6	...	...	...	19	...	...	...	...	...	...	...	...	...	...	2	...	
South Central Division.....	274	53	172	3	...	15	...	5	51	...	...	1	11	...	...	...	...	...	...	...	...	...	...	3	...	
North Central Division.....	1,284	226	527	53	2	344	66	41	297	9	...	12	45	21	7	1	...	...	35	1	...	...	19	1	...	
Western Division.....	86	32	48	3	...	41	1	1	23	...	...	2	...	...	...	...	...	...	1	7	...	...	16	...	...	
North Atlantic Division:																										
Maine.....	102	...	14	...	...	...	...	...	13	...	...	...	4	...	...	...	...	...	...	...	...	...	...	...	...	
New Hampshire.....	48	...	7	...	...	9	...	18	...	...	...	...	7	...	...	...	...	...	...	...	...	...	...	...	...	
Vermont.....	32	12	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
Massachusetts.....	581	123	34	...	1	17	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	
Rhode Island.....	56	14	...	...	...	7	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
Connecticut.....	240	17	9	2	...	116	...	12	...	...	...	1	4	...	...	...	...	...	...	...	...	...	...	...	...	
New York.....	318	71	109	17	2	72	6	45	38	4	...	115	51	9	...	11	6	...	...	21	7	7	...	...	...	
New Jersey.....	100	72	30	7	...	...	...	2	...	...	1	...	9	6	...	...	...	...	...	...	...	...	...	...	...	
Pennsylvania.....	409	106	142	11	...	65	4	32	15	...	...	9	29	3	4	1	2	...	...	...	...	3	...	...	...	
South Atlantic Division:																										
Delaware.....	4	1	1	1	...	...	...	...	...	...	...	...	7	...	...	...	...	...	...	...	...	...	...	...	...	
Maryland.....	120	15	6	...	...	1	...	31	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
District of Columbia.....	33	12	1	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
Virginia.....	61	23	10	...	1	...	...	...	...	...	...	...	3	...	...	...	...	...	...	...	...	...	...	...	...	
West Virginia.....	27	2	3	...	...	4	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	
North Carolina.....	66	8	22	...	...	9	...	1	4	...	...	...	3	...	...	...	...	...	...	...	...	...	...	...	...	
South Carolina.....	50	11	11	...	...	1	...	...	...	...	...	...	5	...	...	...	...	...	...	...	...	...	...	...	...	
Georgia.....	100	4	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
Florida.....	7	...	3	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
South Central Division:																										
Kentucky.....	57	14	16	...	...	4	...	...	2	...	...	...	2	...	...	...	...	...	...	...	...	...	...	...	...	
Tennessee.....	97	19	77	3	...	3	...	2	6	...	...	...	8	...	...	...	...	...	...	...	...	...	...	...	...	
Alabama.....	30	2	15	...	...	4	...	...	3	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
Mississippi.....	11	...	6	...	...	2	...	1	6	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
Louisiana.....	38	12	27	...	...	1	...	...	25	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	
Texas.....	22	6	28	...	...	...	...	1	7	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	
Arkansas.....	19	...	3	...	...	1	...	...	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	



The number of A. B. degrees conferred continues to be considerably larger than the number of other first degrees. The number of A. M. degrees will undoubtedly continue to grow smaller year by year. This is due to the fact that many of the institutions which formerly granted the master's degree *in course* three years after attaining the bachelor's degree, are withdrawing this privilege, and are requiring one year's resident study, or its equivalent, together with an examination and, in some cases, a thesis.

The total number of Ph. D. degrees conferred for work done was 189. Of this number, 110, or 58.2 per cent, were conferred by the institutions in the North Atlantic Division, 16.9 per cent in the South Atlantic Division, 2.7 per cent in the South Central Division, 21.7 per cent in the North Central Division, and 0.5 per cent in the Western Division. Degrees in pedagogy were conferred in but 6 States in the North Central and Western divisions. In many of the institutions offering courses in pedagogy or the science and art of teaching, such courses are counted towards fulfilling the requirements for degrees in arts and science.

The total number of honorary degrees conferred in 1892-93 was 886. Of this number, 396 were A. M., 121 LL. D., and 277 D. D. In all there were conferred 458 honorary doctorates, of which number 32 were doctors of philosophy. The number of honorary degrees, by States, is given in the following table:





	5	6		1	4	11			
Iowa.....									
Missouri.....	15			1	1	3			
South Dakota.....						1			
Nebraska.....	2								
Kansas.....	1					7			1
<b>Western Division:</b>									
Colorado.....					1	2			
New Mexico.....	1								
Utah.....					1	1			
Washington.....						4			
Oregon.....	1			1		5		2	
California.....						3			3

*Property.*—The following table gives in a summarized form the number of volumes in libraries, the value of scientific apparatus, the value of grounds and buildings, the amount of productive funds, and the amount of benefactions received during the year:

*Universities and colleges for 1892-93.*

SUMMARY OF PROPERTY.

States and Territories.	Libraries.		Value of scientific apparatus and libraries.	Value of grounds and buildings.	Amount of productive funds.	Benefactions.
	Bound volumes.	Pamphlets.				
United States.....	5,319,602	1,148,567	\$13,532,419	\$95,545,681	\$94,500,758	\$6,532,157
North Atlantic Division....	2,460,673	638,431	6,997,916	26,193,700	52,801,159	2,460,662
South Atlantic Division....	567,561	97,056	1,020,956	9,384,750	7,280,781	294,905
South Central Division....	385,695	72,715	638,589	8,234,225	6,845,608	366,417
North Central Division....	1,696,858	301,120	3,977,335	31,725,296	24,330,354	3,210,708
Western Division.....	208,815	39,245	837,623	10,007,250	3,242,856	199,465
North Atlantic Division:						
Maine.....	91,803	.....	114,397	678,936	1,332,933	151,600
New Hampshire.....	73,500	.....	100,000	250,000	1,100,000	.....
Vermont.....	65,461	1,150	135,000	450,000	630,000	116,800
Massachusetts.....	643,650	320,050	1,353,233	7,002,500	13,652,923	729,133
Rhode Island.....	81,000	20,000	538,200	1,250,000	1,130,369	66,000
Connecticut.....	275,000	23,000	767,200	4,610,000	5,501,912	223,036
New York.....	678,195	86,322	2,307,416	11,859,587	21,523,434	693,415
New Jersey.....	137,926	30,020	565,800	1,930,000	2,700,000	.....
Pennsylvania.....	415,138	157,839	1,116,640	8,022,737	5,224,588	470,628
South Atlantic Division:						
Delaware.....	6,007	4,589	35,000	80,000	83,000	.....
Maryland.....	144,520	41,870	230,700	1,702,090	3,013,500	12,310
District of Columbia.....	92,782	10,172	150,000	2,200,000	425,000	4,239
Virginia.....	137,000	16,200	344,900	1,694,000	1,775,816	85,110
West Virginia.....	9,446	575	20,200	345,000	114,640	6,071
North Carolina.....	64,006	13,850	113,000	1,110,000	321,027	1,009
South Carolina.....	53,200	4,000	8,100	776,000	252,000	21,805
Georgia.....	45,800	4,500	109,036	1,156,750	919,798	43,469
Florida.....	7,960	1,300	10,000	231,000	146,000	120,901
South Central Division:						
Kentucky.....	50,713	8,151	64,000	1,072,000	1,166,233	32,956
Tennessee.....	130,344	22,964	279,556	3,140,870	2,163,000	76,388
Alabama.....	27,600	5,700	98,350	704,500	353,000	7,000
Mississippi.....	23,000	6,000	67,300	455,000	708,061	1,009
Louisiana.....	116,800	20,800	103,683	1,437,255	1,701,814	212,520
Texas.....	27,433	5,900	72,900	1,125,000	738,000	36,553
Arkansas.....	9,200	2,500	12,500	255,000	15,500	.....
Oklahoma.....	600	.....	300	45,000	.....	.....
North Central Division:						
Ohio.....	320,837	90,675	877,389	6,133,304	6,525,165	293,594
Indiana.....	180,900	26,150	447,144	2,355,304	2,044,368	104,292
Illinois.....	434,584	43,292	572,893	5,996,700	5,743,239	2,136,048
Michigan.....	172,734	55,334	671,306	1,792,415	1,685,731	63,466
Wisconsin.....	101,900	11,009	263,500	2,159,000	1,318,500	116,575
Minnesota.....	72,525	4,245	183,378	2,853,232	1,634,554	25,202
Iowa.....	126,151	14,750	213,500	2,270,341	1,473,291	103,609
Missouri.....	146,503	32,325	186,000	3,931,700	2,797,729	107,861
North Dakota.....	7,740	4,100	37,500	290,000	25,000	5,800
South Dakota.....	11,525	2,574	22,025	372,650	85,000	118,466
Nebraska.....	41,559	6,525	203,400	1,988,650	434,777	32,377
Kansas.....	79,900	9,550	293,300	1,602,000	563,000	103,418
Western Division:						
Montana.....	1,200	200	7,000	50,000	0	22,000
Wyoming.....	2,650	1,700	2,500	100,000	.....	0
Colorado.....	22,500	3,300	62,800	786,300	387,728	103,000
New Mexico.....	500	250	750	25,000	.....	.....
Arizona.....	.....	.....	26,475	68,700	.....	.....
Utah.....	10,500	2,500	36,000	280,000	.....	.....
Nevada.....	3,468	2,300	36,100	81,350	0	0
Idaho.....	1,585	4,000	4,493	40,000	.....	.....
Washington.....	10,232	4,600	15,300	529,000	4,000	18,900
Oregon.....	17,730	7,425	22,600	455,000	328,000	10,840
California.....	138,450	12,970	629,600	7,533,900	2,523,128	44,725



The total number of volumes in libraries in 1892-93 was 5,319,602, an increase of a little more than 700,000 over the number reported in 1891-92. Besides these bound volumes there were reported 1,148,567 pamphlets. The North Atlantic Division seems to be especially favored in the number of books possessed by its universities and colleges. While this division contains but 17.3 per cent of the total number of institutions, it has 46.2 per cent of the total number of books reported, and 55.6 per cent of the total number of pamphlets. The total amount of the value of grounds, buildings, and apparatus, together with the amount of invested funds, forms an equipment worth \$203,578,858. Of this total amount we again find that about 47.2 per cent is possessed by the institutions in the North Atlantic Division.

While the institutions in this division have but 37.9 per cent of the total amount of the value of grounds and buildings, they have almost 50 per cent of the scientific apparatus and 55.9 per cent of the total amount of productive funds. These figures are very significant when it is remembered how small a proportion of the institutions are located in this division. As to the amount of benefactions received during the year, the North Central Division has the advantage, having received almost 50 per cent of the total amount reported. Of the \$3,210,708 reported by the institutions of this division, the University of Chicago reported \$1,950,000.

*Income.*—The income of universities and colleges is derived from tuition fees, from productive funds, State or municipal appropriations, appropriations from the General Government and from miscellaneous sources. The total income reported by the universities and colleges in 1892-93 was \$14,601,034. Of this amount, \$5,466,810, or 37.4 per cent, was derived from tuition fees, thus showing the comparatively small proportion of the cost of an education that is borne by the students. Of the remainder, 34.9 per cent is the income from invested funds; 11.5 per cent was appropriated by the several States and cities; 4.7 per cent was appropriated by the General Government, while the balance was received from miscellaneous sources. The following summary gives the statistics concerning the income by States:

*Universities and colleges for 1892-93.*

## INCOME.

States and Territories.	From tuition fees.	From productive funds.	From State or municipal appropriations.	From U. S. Gov- ernment.	From other sources.	Total income.
United States.....	\$5,466,810	\$5,099,859	\$1,679,051	\$682,292	\$1,423,022	\$14,601,034
North Atlantic Division....	2,372,798	2,586,367	228,945	131,075	542,442	5,861,597
South Atlantic Division....	484,375	378,453	162,052	187,144	196,171	1,408,195
South Central Division.....	491,258	444,284	26,600	56,728	106,489	1,125,359
North Central Division.....	1,941,246	1,492,577	879,656	167,023	531,667	5,012,169
Western Division.....	177,133	198,208	381,798	140,322	46,253	1,193,714
North Atlantic Division:						
Maine.....	42,380	59,827	0	0	0	102,207
New Hampshire.....	18,000	60,000	0	18,000	0	96,000
Vermont.....	10,612	32,198	6,000	26,130	8,581	83,521
Massachusetts.....	604,429	655,548	-----	-----	143,026	1,404,003
Rhode Island.....	63,250	66,334	-----	2,945	-----	132,529
Connecticut.....	323,872	243,975	-----	18,000	140,611	726,458
New York.....	733,265	1,058,169	151,163	33,000	153,727	2,129,264
New Jersey.....	50,720	150,150	0	33,000	20,000	253,870
Pennsylvania.....	526,330	259,136	71,782	0	76,497	933,745
South Atlantic Division:						
Delaware.....	-----	4,980	-----	14,400	2,108	21,488
Maryland.....	187,400	119,700	17,700	0	33,270	358,070
District of Columbia...	94,602	21,084	0	90,500	20,371	226,557
Virginia.....	74,372	99,071	40,000	0	69,442	279,885
West Virginia.....	10,538	6,389	49,982	30,000	5,803	102,712
North Carolina.....	58,553	34,537	20,000	1,500	32,662	147,252
South Carolina.....	21,354	24,525	33,270	38,744	14,000	131,893
Georgia.....	23,416	60,132	1,100	12,000	18,289	114,937
Florida.....	14,140	8,035	0	0	3,226	25,401
South Central Division:						
Kentucky.....	67,020	67,008	0	0	3,157	137,185
Tennessee.....	157,089	127,880	950	33,000	55,379	374,298
Alabama.....	72,914	27,000	1,200	0	1,000	102,114
Mississippi.....	21,344	42,983	400	0	1,600	66,327
Louisiana.....	77,148	108,505	13,450	23,728	23,409	246,240
Texas.....	79,476	69,378	5,000	0	12,144	165,998
Arkansas.....	18,200	1,530	0	0	9,800	27,530
Oklahoma.....	67	-----	5,600	-----	-----	5,667
North Central Division:						
Ohio.....	275,785	412,880	67,292	18,000	94,583	868,545
Indiana.....	281,182	110,182	40,000	0	6,892	438,256
Illinois.....	426,691	335,626	63,533	33,000	178,403	1,037,253
Michigan.....	199,704	110,959	181,000	0	36,918	528,581
Wisconsin.....	54,140	70,976	168,000	33,000	61,459	387,575
Minnesota.....	72,185	80,250	69,500	33,000	38,476	293,411
Iowa.....	193,151	92,931	67,000	0	21,423	377,505
Missouri.....	303,439	186,505	1,331	17,023	27,636	535,934
North Dakota.....	7,450	1,500	37,000	0	7,000	52,950
South Dakota.....	16,810	4,300	28,500	0	5,085	54,695
Nebraska.....	29,511	56,868	70,000	33,000	25,087	214,466
Kansas.....	78,198	29,600	86,500	0	28,700	222,998
Western Division:						
Montana.....	7,500	-----	-----	-----	-----	7,500
Wyoming.....	293	-----	36,559	22,322	-----	59,174
Colorado.....	20,218	21,185	70,000	0	11,427	122,830
New Mexico.....	0	0	12,500	0	0	12,500
Arizona.....	0	0	12,000	18,000	190	30,190
Utah.....	1,543	-----	45,600	-----	-----	46,543
Nevada.....	0	0	25,000	34,000	0	59,000
Idaho.....	-----	1,349	15,164	33,600	-----	49,513
Washington.....	14,800	400	25,000	0	4,700	44,900
Oregon.....	14,296	28,091	25,000	0	14,624	82,011
California.....	118,483	147,183	115,575	33,000	15,312	679,553

## VI.—COLLEGES FOR WOMEN.

(See Part IV, Tables 7 and 8, for detailed statistics.)

The total number of colleges for women reported for the year 1892-93 was 143. Of this number 16 were placed in a division by themselves as representing a class of institutions similar to the coeducational colleges and to the colleges for men. The number of institutions in this division was increased over the number in the preceding year by the

addition of Rockford College, Rockford, Ill., and the H. Sophie Newcomb Memorial College, New Orleans, La. During the year information was received of the closing of Ingham University, Le Roy, N. Y. New institutions that will undoubtedly be classed in this division for the year 1893-94 are the Marietta College for Women, at Marietta, Ohio, and the Randolph-Macon Woman's College at Lynchburg, Va.

The summarized statistics of the 16 institutions, included in Division A of the table of colleges for women, are given in the following tables:

*Colleges for women—Division A.*

SUMMARY OF STATISTICS FOR 1892-93.

States.	No. of institutions.	Professors and instructors.						Students.				Bound volumes in library.
		Preparatory department.		Collegiate department.		Total number.		Preparatory department.	Collegiate department.	Graduate department.	Total number.	
		Male.	Female.	Male.	Female.	Male.	Female.					
United States.....	16	1	22	199	235	{ <sup>(33)</sup> 205 265}		356	3,108	90	4,023	123,324
North Atlantic Division.....	11	.....	5	179	201	179	206	53	2,901	86	3,042	111,824
South Atlantic Division.....	1	.....	.....	.....	.....	{ <sup>(33)</sup>		.....	.....	.....	303	2,000
South Central Division.....	1	1	8	4	7	5	12	58	70	4	193	.....
North Central Division.....	2	.....	6	15	18	16	24	193	115	.....	308	5,000
Western Division.....	1	.....	3	1	9	5	23	50	22	.....	177	4,500
North Atlantic Division:												
Massachusetts.....	4	0	0	98	123	98	123	0	1,912	39	1,951	70,600
New York.....	5	0	1	45	62	45	63	40	787	12	839	27,024
New Jersey.....	1	.....	4	16	5	16	9	15	35	.....	50	2,700
Pennsylvania.....	1	0	0	20	11	20	11	0	167	35	202	11,500
South Atlantic Division:												
Maryland.....	1	.....	.....	.....	.....	{ <sup>(33)</sup>		.....	.....	.....	303	2,000
South Central Division:												
Louisiana.....	1	1	8	4	7	5	12	58	70	4	193	.....
North Central Division:												
Ohio.....	1	0	0	15	4	15	4	0	85	0	85	.....
Illinois.....	1	.....	6	.....	14	1	20	193	30	.....	223	5,000
Western Division:												
California.....	1	.....	3	1	9	5	23	50	22	.....	177	4,500

*Colleges for women—Division A.*

SUMMARY OF STATISTICS FOR 1892-93.

States.	Value of scientific apparatus.	Value of grounds and buildings.	Amount of productive funds.	Income.				Benefactions.
				From productive funds.	From tuition fees.	From other sources.	Total.	
United States.....	\$494,982	\$4,755,442	\$2,965,965	\$200,657	\$562,292	\$250,391	\$1,059,340	\$127,435
North Atlantic Division...	384,982	3,850,442	2,683,965	184,728	477,739	249,904	928,431	127,435
South Atlantic Division...		345,000	170,000	8,500	30,000		38,500	
North Central Division...	100,000	160,000	37,000	2,429	34,553	427	37,409	
Western Division.....	10,000	400,000	75,000	5,000	50,000		55,000	
North Atlantic Division:								
Massachusetts.....	168,562	1,963,638	780,420	79,209	356,539	28,986	464,734	39,855
New York.....	181,420	1,240,804	1,303,545	65,519	102,100	163,580	331,199	62,680
New Jersey.....							16,000	
Pennsylvania.....	35,000	646,000	600,000	40,000	19,100	57,398	116,498	33,900
South Atlantic Division:								
Maryland.....		345,000	170,000	8,500	30,000		38,500	
North Central Division:								
Illinois.....	100,000	160,000	37,000	2,429	34,553	427	37,409	
Western Division:								
California.....	10,000	400,000	75,000	5,000	50,000		55,000	

*a* Estimated.



*Colleges for women—Division A.*

## STUDENTS IN DEGREE COURSES IN 1892-93.

States.	Number of institutions reporting classification of students.	Number of students in degree courses.	Per cent of students in degree courses pursuing courses leading to—			
			A. B. degree.	B. L. degree.	B. S. degree.	Other first degrees.
United States.....	13	2,435	62.71	18.89	17.58	0.82
North Atlantic Division.....	11	2,392	62.79	18.48	17.89	.81
North Central Division.....	1	22	100.00	0	0	0
Western Division.....	1	21	9.52	90.48	0	0
North Atlantic Division:						
Massachusetts.....	4	1,589	49.78	26.31	23.91	0
New York.....	5	626	85.30	3.84	7.67	3.19
New Jersey.....	1	13	100.00	0	0	0
Pennsylvania.....	1	164	100.00	0	0	0
North Central Division:						
Illinois.....	1	22	100.00	0	0	0
Western Division:						
California.....	1	21	9.52	90.48	0	0

*Colleges for women—Division A.*

## PREPARATION OF FRESHMEN OF 1892-93.

States.	Number of institutions reporting.	Number of freshmen.	Per cent of freshmen prepared by—			
			Preparatory departments of colleges.	Private preparatory schools.	Public high schools.	Private study.
United States.....	8	509	6.68	44.20	46.76	2.33
North Atlantic Division.....	6	494	6.07	45.34	46.16	2.43
North Central Division.....	1	9	44.44	11.11	44.45	0
Western Division.....	1	6	0	0	100.00	0
North Atlantic Division:						
Massachusetts.....	1	221	0	46.15	53.85	0
New York.....	2	208	11.54	37.50	49.04	1.92
New Jersey.....	1	5	40.00	0	40.00	20.00
Pennsylvania.....	1	60	6.67	73.33	8.33	11.67
North Central Division:						
Illinois.....	1	9	44.44	11.11	44.45	0
Western Division:						
California.....	1	6	0	0	100.00	0

As will be seen from these tables, 11 of the 16 institutions are found in the North Atlantic Division. The large proportion of these institutions in this division is due probably to the fact that in this division coeducation of the sexes has made the least progress. In nearly all of the Western States the State universities and other leading educational institutions have, from the first, been open to women, thus rendering unnecessary the founding of any large number of institutions for the education of women only.

While the North Atlantic Division has 68.75 per cent of the institutions, it has 93.31 per cent of the college students, 95.55 per cent of the graduate students, and but 15.45 per cent of the preparatory students.

It has 90.68 per cent of the books reported, 77.78 per cent of the scientific apparatus, 80.97 per cent of the grounds and buildings, and 90.5 per cent of the productive funds, while all of the benefactions reported

were received by institutions in this division. It may be well to state, however, that the financial statistics of the Cleveland College for Women and of the H. Sophie Newcomb Memorial College were not reported separately from those of the institutions with which they are connected, viz, the Western Reserve University and Tulane University.

Only 13 of the 16 institutions reported the classification of students in degree courses. Of the 2,435 students classified, 62.71 per cent were pursuing courses of study leading to the A. B. degree. This proportion is greater by 7 per cent than the proportion of students in the coeducational colleges and colleges for men that pursue courses of study leading to the same degree. One reason, if not the principal one, for the greater proportion in the colleges for women may be found in the fact that in this class of institutions there are no technical courses like the courses in civil, mechanical, electrical, and mining engineering to claim the attention of the students.

The summarized statistics of the 127 institutions included in Division B of the table of colleges for women are given in the following tables:

*Colleges for women, Division B, for 1892-93.*

States.	Number of institutions.	Professors and instructors.		Students.						Volumes in libraries.	Benefactions.
		Male.	Female.	Primary.	Preparatory.	Academic.	Collegiate.	Graduate.	Total number.		
United States .....	127	324	1,287	1,683	3,043	2,704	8,966	136	18,926	190,015	\$55,546
North Atlantic Division .....	13	44	196	103	423	856	702	16	2,451	46,881	3,446
South Atlantic Division .....	43	143	399	485	987	416	3,980	53	6,465	46,589	26,200
South Central Division .....	47	81	419	948	1,029	805	3,185	51	6,801	55,233	1,200
North Central Division .....	22	55	238	101	574	590	1,078	13	3,075	34,312	24,700
Western Division .....	2	1	35	46	30	37	21	3	134	7,000	.....
North Atlantic Division:											
Maine .....	2	10	13	.....	58	335	26	.....	419	11,000	1,200
New Hampshire .....	1	4	8	.....	.....	.....	.....	.....	273	2,000	246
Massachusetts .....	1	10	23	0	8	.....	68	0	182	1,900	.....
New York .....	1	6	48	44	275	206	128	3	756	5,020	1,000
New Jersey .....	1	.....	13	8	6	8	12	.....	34	1,061	.....
Pennsylvania .....	7	14	91	51	76	207	468	13	787	25,900	1,000
South Atlantic Division:											
Maryland .....	3	13	29	.....	3	55	256	11	325	5,055	.....
Virginia .....	14	39	137	180	237	182	1,175	17	1,869	9,260	3,450
West Virginia .....	1	.....	2	20	17	.....	3	.....	40	300	.....
North Carolina .....	8	25	67	55	228	39	483	.....	979	8,450	525
South Carolina .....	7	33	61	13	199	109	753	22	1,169	8,682	2,000
Georgia .....	10	28	103	212	253	31	1,305	3	2,023	15,442	20,225
South Central Division:											
Kentucky .....	12	20	100	339	355	167	852	18	1,736	15,600	.....
Tennessee .....	13	32	136	216	265	156	1,027	1	2,071	14,500	290
Alabama .....	6	5	74	83	118	88	508	16	850	11,633	.....
Mississippi .....	10	10	67	192	166	328	415	16	1,258	9,300	.....
Louisiana .....	2	4	10	32	19	32	17	.....	310	800	.....
Texas .....	4	10	32	86	106	34	363	.....	636	3,400	1,000
North Central Division:											
Ohio .....	7	15	93	.....	75	155	369	8	1,004	11,100	21,000
Illinois .....	3	14	34	20	66	137	107	.....	500	4,800	.....
Wisconsin .....	1	.....	7	.....	11	24	14	.....	49	2,600	.....
Minnesota .....	1	2	6	.....	44	.....	10	.....	54	1,500	.....
Missouri .....	8	23	72	38	276	269	514	5	1,194	10,412	3,600
Kansas .....	2	1	26	43	102	5	124	.....	274	4,500	700
Western Division:											
California .....	2	1	35	46	30	37	21	3	134	7,000	.....

*Colleges for women, Division B, for 1892-93.*

States.	Value of scientific apparatus.	Value of grounds and buildings.	Amount of productive funds.	Income.				Total.
				From productive funds.	From tuition fees.	From State or municipal appropriations.	From other sources.	
United States.....	\$230, 138	\$3,314, 139	\$628, 982	\$38, 091	\$1,640, 508	\$53, 165	\$221, 412	\$2, 011, 176
North Atlantic Division..	73, 566	1,355, 639	151, 350	9, 321	314, 000	.....	72, 281	395, 602
South Atlantic Division..	50, 022	2, 814, 900	133, 500	7, 680	550, 607	23, 080	40, 881	622, 228
South Central Division..	53, 830	2, 044, 600	52, 000	3, 120	416, 550	30, 105	62, 500	512, 275
North Central Division..	37, 750	1, 821, 000	292, 132	17, 970	356, 601	.....	45, 750	420, 321
Western Division.....	15, 000	248, 000	.....	.....	2, 750	.....	.....	60, 750
North Atlantic Division:								
Maine.....	14, 000	207, 000	121, 000	6, 600	8, 500	.....	500	15, 600
New Hampshire.....	6, 000	75, 000	30, 350	2, 721	7, 000	.....	11, 281	21, 002
Massachusetts.....	2, 500	135, 000	0	0	75, 000	0	.....	75, 000
New York.....	20, 566	218, 639	0	0	80, 000	0	0	80, 000
New Jersey.....	2, 000	35, 000	.....	.....	4, 000	.....	.....	4, 000
Pennsylvania.....	28, 500	685, 000	.....	.....	139, 500	.....	60, 500	200, 000
South Atlantic Division:								
Maryland.....	8, 500	225, 000	35, 600	1, 800	47, 000	.....	5, 000	53, 800
Virginia.....	9, 000	1, 135, 000	5, 000	300	185, 517	.....	4, 901	190, 718
West Virginia.....	.....	8, 000	0	0	900	0	0	900
North Carolina.....	3, 400	403, 000	7, 500	500	118, 300	.....	2, 180	120, 980
South Carolina.....	10, 500	315, 000	1, 000	80	74, 000	100	23, 000	97, 240
Georgia.....	18, 622	758, 900	85, 000	5, 000	124, 890	22, 900	5, 800	158, 590
South Central Division:								
Kentucky.....	8, 750	300, 000	.....	.....	81, 900	.....	26, 600	108, 500
Tennessee.....	14, 000	698, 000	35, 000	2, 100	152, 720	.....	17, 700	172, 520
Alabama.....	9, 850	488, 000	0	0	76, 250	0	14, 100	90, 350
Mississippi.....	13, 550	304, 600	17, 000	1, 020	42, 180	25, 805	1, 700	70, 705
Louisiana.....	150	50, 000	.....	.....	4, 000	4, 000	.....	8, 000
Texas.....	7, 560	294, 600	.....	.....	59, 500	300	2, 400	62, 200
North Central Division:								
Ohio.....	7, 000	685, 000	109, 132	5, 250	131, 833	.....	11, 000	148, 083
Illinois.....	6, 300	260, 000	0	0	71, 000	.....	23, 000	94, 000
Wisconsin.....	2, 000	25, 000	75, 000	4, 500	6, 500	.....	2, 000	13, 000
Minnesota.....	2, 000	50, 000	26, 000	1, 570	5, 000	.....	1, 000	7, 570
Missouri.....	9, 850	410, 000	89, 000	6, 500	110, 500	.....	8, 000	125, 000
Kansas.....	10, 600	391, 000	2, 000	150	31, 768	.....	750	32, 668
Western Division:								
California.....	15, 000	248, 000	0	.....	2, 750	.....	.....	60, 750

The equipment of the institutions in the several divisions may be shown by comparing the proportion of institutions with the proportion of property reported by the institutions. The following summarized statement gives such proportion by divisions:

Divisions.	Proportion of—				
	Institutions.	Volumes in libraries.	Scientific apparatus.	Grounds and buildings.	Productive funds.
	<i>Per cent.</i>	<i>Per cent.</i>	<i>Per cent.</i>	<i>Per cent.</i>	<i>Per cent.</i>
North Atlantic.....	10.24	24.67	31.97	16.31	24.06
South Atlantic.....	33.86	24.52	21.73	34.22	21.22
South Central.....	37.01	29.07	23.38	24.59	8.27
North Central.....	17.32	18.06	16.40	21.90	46.45
Western.....	1.57	3.68	6.52	2.98	0

## VII.—COLLEGES OF AGRICULTURE AND THE MECHANIC ARTS.

(See Part IV, Tables 9-11, for full statistics.)

The statistics concerning the colleges of agriculture and the mechanic arts endowed by the act of Congress of July 2, 1862, and further endowed by the act of Congress of August 30, 1890, are given in three



tables in Part IV of this report, the first two of which include the colleges for white students and those in which no distinction as to race and color is made in the admission of students, while the third table includes the institutions for students of the colored race.

The acts on which these institutions depend mainly for their support have been printed a number of times in former reports of this office and it is therefore not deemed necessary to again insert them. It may, however, be of interest to state that in accordance with the provisions of the act of July 2, 1862, and of the acts admitting several of the newer States, 10,400,000 acres of land have been given by the General Government to the several States for the endowment of agricultural and mechanical colleges.

In some of the States the land was disposed of advantageously, while in a large number of the States the amounts realized from the sale of the lands are very small when compared with the number of acres received. In a few of the newer States the land can not, according to law, be sold for less than \$10 per acre. This wise provision of law can not but prove of great benefit to the institutions of these States, as the amounts realized from the sale of the lands will be considerably greater than the amounts realized by States that received four or five times as much land. The number of acres received by the several States, together with the income derived therefrom for the year 1892-93, as reported by the institutions, is as follows:

States.	Number of acres granted for agricul- tural and mechanical colleges.	Income for 1892-93 de- rived from proceeds of the sale of lands.
United States.....	10,400,000	\$632,677.80
North Atlantic Division .....	3,150,000	94,906.71
South Atlantic Division .....	1,560,000	99,577.52
South Central Division .....	1,620,000	99,323.94
North Central Division .....	3,140,000	273,977.65
Western Division.....	930,000	64,886.98
North Atlantic Division:		
Maine.....	210,000	6,275.00
New Hampshire.....	150,000	4,800.03
Vermont.....	150,000	8,130.00
Massachusetts.....	360,000	12,739.50
Rhode Island.....	120,000	3,024.00
Connecticut.....	180,000	4,468.21
New York.....	990,000	18,000.00
New Jersey.....	210,000	6,960.00
Pennsylvania.....	780,000	30,510.00
South Atlantic Division:		
Delaware.....	90,000	4,980.00
Maryland.....	210,000	6,142.30
Virginia.....	300,000	30,998.08
West Virginia.....	150,000	6,388.00
North Carolina.....	270,000	7,500.00
South Carolina.....	180,000	11,508.00
Georgia.....	270,000	22,954.14
Florida.....	90,000	9,107.00
South Central Division:		
Kentucky.....	330,000	9,900.00
Tennessee.....	300,000	23,760.00
Alabama.....	240,000	20,280.00
Mississippi.....	210,000	11,593.25
Louisiana.....	210,000	9,115.69
Texas.....	180,000	14,280.00
Arkansas.....	150,000	10,400.00

States.	Number of acres granted for agricul- tural and mechanical colleges.	Income for 1892-93 de- rived from proceeds of the sale of lands.
North Central Division:		
Ohio .....	630,000	\$29,849.43
Indiana .....	390,000	17,000.00
Illinois .....	480,000	26,082.38
Michigan .....	240,000	36,000.00
Wisconsin .....	240,000	16,961.95
Minnesota .....	120,000	14,977.00
Iowa .....	240,000	44,417.73
Missouri .....	330,000	15,850.00
North Dakota .....	130,000	.....
South Dakota .....	160,000	.....
Nebraska .....	90,000	42,652.12
Kansas .....	90,000	30,187.04
Western Division:		
Montana .....	140,000	.....
Wyoming .....	90,000	.....
Colorado .....	90,000	10,244.27
Nevada .....	90,000	.....
Idaho .....	90,000	.....
Washington .....	190,000	.....
Oregon .....	90,000	10,952.00
California .....	150,000	43,690.71

From the above table it will be seen that in a number of the States no income is reported from the funds arising from the act of July 2, 1862. This is due to the fact that those States have not yet been able to dispose of their lands advantageously or at the rate required by law. The total income for 1892-93, arising from the funds derived from the sale of these lands, was reported as \$632,677.80.

In addition to the lands granted by the act of July 2, 1862, the General Government, by an act approved August 30, 1890, gives a certain sum of money annually to the agricultural and mechanical colleges. The amount granted by this act for the year ended June 30, 1890, was \$15,000 for each State and Territory having an agricultural and mechanical college endowed by the act of July 2, 1862. The amount increases annually by \$1,000 until the sum appropriated reaches \$25,000 per annum, which sum will be the amount to be disbursed annually thereafter to each State and Territory, provided certain requirements are complied with.

The act of August 30, 1890, unlike the act of July 2, 1862, specifies the branches of study for which the money granted may be disbursed. It shall "be applied only to instruction in agriculture, the mechanic arts, the English language, and the various branches of mathematical, physical, natural, and economic science, with special reference to their applications in the industries of life, and to the facilities for such instruction." It is held that this language authorizes the purchase from this money of apparatus, machinery, text-books, reference books, stock, and material, used in instruction or for purposes of illustration in connection with any of the branches enumerated, and the payment of salaries of instructors in said branches only.

The erection of buildings is specifically prohibited by the act, and the Assistant Attorney-General for the Interior Department has decided

that the purchase of land and the payment of salaries of treasurers are not allowable. It should not be expended for repairs of buildings, furniture, cases, shelving, tableware, cooking utensils, musical instruments, the salaries of instructors in ancient and modern languages (except English), or for the salaries of professors of pedagogy; neither should it be expended for the salaries of secretaries, bookkeepers, janitors, watchmen, etc. In short, the plant—the land, buildings, and ordinary appliances of a school—must be provided from other sources, and this particular fund must be applied exclusively to the subjects named in the act and the facilities especially required for those subjects.

The amounts disbursed to the several States and Territories to June 30, 1893, under this act are as follows:

*Disbursements to the States and Territories of the appropriation in aid of colleges of agriculture and the mechanic arts under the act of Congress approved August 30, 1890.*

States and Territories.	First installment, year ending June 30, 1890		Second installment, year ending June 30, 1891.		Third installment, year ending June 30, 1892.		Fourth installment, year ending June 30, 1893.	
	Requisitions of Interior Department.	Amount.	Requisitions of Interior Department.	Amount.	Requisitions of Interior Department.	Amount.	Requisitions of Interior Department.	Amount.
Alabama .....	July 27, 1891	\$15,000	July 27, 1891	\$16,000	Sept. 8, 1891	\$17,000	Aug. 1, 1892	\$18,000
Arizona .....	Dec. 3, 1890	15,000	May 5, 1891	16,000	Sept. 7, 1891	17,000	.....do.....	18,000
Arkansas .....	May 13, 1891	15,000	Aug. 4, 1891	16,000	.....do.....	17,000	.....do.....	18,000
California .....	Jan. 20, 1891	15,000	May 5, 1891	16,000	.....do.....	17,000	.....do.....	18,000
Colorado .....	Nov. 11, 1890	15,000	Mar. 2, 1891	16,000	.....do.....	17,000	.....do.....	18,000
Connecticut .....	Dec. 3, 1890	15,000	.....do.....	16,000	.....do.....	17,000	.....do.....	18,000
Delaware .....	Nov. 5, 1890	15,000	Mar. 16, 1891	16,000	.....do.....	17,000	.....do.....	18,000
Florida .....	Mar. 4, 1891	15,000	May 5, 1891	16,000	.....do.....	17,000	.....do.....	18,000
Georgia .....	July 9, 1891	15,000	July 9, 1891	16,000	Sept. 8, 1891	17,000	.....do.....	18,000
Idaho .....	.....do.....	.....do.....	.....do.....	.....do.....	.....do.....	.....do.....	Jan. 7, 1893	18,000
Illinois .....	Nov. 5, 1890	15,000	June 25, 1891	16,000	Sept. 7, 1891	17,000	Aug. 1, 1892	18,000
Indiana .....	.....do.....	15,000	Mar. 2, 1891	16,000	.....do.....	17,000	.....do.....	18,000
Iowa .....	Nov. 13, 1890	15,000	.....do.....	16,000	.....do.....	17,000	.....do.....	18,000
Kansas .....	Nov. 5, 1890	15,000	.....do.....	16,000	.....do.....	17,000	.....do.....	18,000
Kentucky .....	Apr. 16, 1891	15,000	Sept. 3, 1891	16,000	.....do.....	17,000	.....do.....	18,000
Louisiana .....	July 20, 1891	15,000	July 20, 1891	16,000	Sept. 8, 1891	17,000	.....do.....	18,000
Maine .....	Apr. 16, 1891	15,000	May 25, 1891	16,000	Sept. 7, 1891	17,000	.....do.....	18,000
Maryland .....	Nov. 5, 1890	15,000	Mar. 18, 1891	16,000	.....do.....	17,000	.....do.....	18,000
Massachusetts .....	.....do.....	15,000	June 9, 1892	16,000	June 9, 1892	17,000	.....do.....	18,000
Michigan .....	.....do.....	15,000	Mar. 2, 1891	16,000	Sept. 7, 1891	17,000	.....do.....	18,000
Minnesota .....	.....do.....	15,000	.....do.....	16,000	.....do.....	17,000	.....do.....	18,000
Mississippi .....	Dec. 3, 1890	15,000	Mar. 27, 1891	16,000	.....do.....	17,000	.....do.....	18,000
Missouri .....	Mar. 30, 1891	15,000	Sept. 3, 1891	16,000	.....do.....	17,000	.....do.....	18,000
Montana .....	.....do.....	.....do.....	.....do.....	.....do.....	.....do.....	.....do.....	May 23, 1893	18,000
Nebraska .....	Dec. 3, 1890	15,000	July 9, 1891	16,000	.....do.....	17,000	Aug. 1, 1892	18,000
Nevada .....	.....do.....	15,000	Mar. 2, 1891	16,000	.....do.....	17,000	.....do.....	18,000
New Hampshire .....	Nov. 5, 1890	15,000	Mar. 4, 1891	16,000	.....do.....	17,000	.....do.....	18,000
New Jersey .....	Nov. 8, 1890	15,000	Mar. 27, 1891	16,000	.....do.....	17,000	.....do.....	18,000
New Mexico .....	.....do.....	15,000	.....do.....	16,000	.....do.....	17,000	.....do.....	18,000
New York .....	Nov. 13, 1890	15,000	May 13, 1891	16,000	.....do.....	17,000	.....do.....	18,000
North Carolina .....	Jan. 20, 1891	15,000	July 1, 1891	16,000	.....do.....	17,000	.....do.....	18,000
North Dakota .....	Dec. 3, 1890	15,000	Mar. 30, 1891	16,000	.....do.....	17,000	.....do.....	18,000
Ohio .....	Nov. 5, 1890	15,000	Mar. 4, 1891	16,000	.....do.....	17,000	.....do.....	18,000
Oklahoma .....	.....do.....	.....do.....	.....do.....	.....do.....	Mar. 14, 1891	17,000	.....do.....	18,000
Oregon .....	Nov. 22, 1890	15,000	May 13, 1891	16,000	Sept. 7, 1891	17,000	.....do.....	18,000
Pennsylvania .....	Nov. 5, 1890	15,000	Feb. 5, 1891	16,000	Sept. 1, 1891	17,000	.....do.....	18,000
Rhode Island .....	June 2, 1892	15,000	June 2, 1892	16,000	June 2, 1892	17,000	.....do.....	18,000
South Carolina .....	Sept. 1, 1892	15,000	Sept. 1, 1892	16,000	Sept. 1, 1892	17,000	Sept. 1, 1892	18,000
South Dakota .....	Dec. 3, 1890	15,000	Mar. 27, 1891	16,000	Sept. 7, 1891	17,000	Aug. 1, 1892	18,000
Tennessee .....	Nov. 11, 1890	15,000	Mar. 4, 1891	16,000	Dec. 14, 1891	17,000	.....do.....	18,000
Texas .....	Dec. 23, 1890	15,000	May 25, 1891	16,000	Sept. 7, 1891	17,000	.....do.....	18,000
Utah .....	Nov. 26, 1890	15,000	Mar. 10, 1891	16,000	.....do.....	17,000	.....do.....	18,000
Vermont .....	Nov. 11, 1890	15,000	Mar. 2, 1891	16,000	.....do.....	17,000	.....do.....	18,000
Virginia .....	Dec. 3, 1890	15,000	Mar. 27, 1891	16,000	.....do.....	17,000	Mar. 17, 1893	18,000
Washington .....	.....do.....	.....do.....	.....do.....	.....do.....	Apr. 19, 1892	17,000	Aug. 1, 1892	18,000
West Virginia .....	May 27, 1891	15,000	Aug. 5, 1891	16,000	Sept. 7, 1891	17,000	.....do.....	18,000
Wisconsin .....	Nov. 5, 1890	15,000	May 5, 1891	16,000	.....do.....	17,000	.....do.....	18,000
Wyoming .....	Dec. 3, 1890	15,000	Mar. 27, 1891	16,000	.....do.....	17,000	.....do.....	18,000
Total .....	.....do.....	660,000	.....do.....	704,000	.....do.....	782,000	.....do.....	864,000



This table shows that under the above-mentioned act the several States and Territories have received to June 30, 1893, an aggregate sum of \$3,010,000.

In addition to the income derived from the acts of July 2, 1862, and August 30, 1890, these institutions have been fairly dealt with by the majority of the States in the way of State appropriations. The amount of such appropriations received by the institutions during the year under consideration was \$1,634,715.18, of which sum \$88,820.41 were for the institutions for colored students. Of the \$1,634,715.18 appropriated, \$761,471.17 were for buildings or other special purposes, leaving but \$773,244.01 appropriated for current expenses.

According to the acts of Congress in aid of colleges of agriculture and the mechanic arts none of the money arising from such acts can be expended for buildings. It has therefore been necessary, from the very founding of a large number of the institutions, for the several States to extend a helping hand.

The establishment of agricultural experiment stations in connection with these institutions has proved a great benefit, not only to the stations, but also to the colleges. The General Government appropriates annually \$15,000 to each State and Territory for the current expenses of the stations. From this amount the staff of the station is paid. But frequently not all of the time of the staff is required by the station and the available time of such members of the staff is then given to the college. We thus find in a great majority of the States that some of the members of the station staff are also members of the college faculty. For instance, the professor of agriculture or the president of the college is also director of the station; the professor of horticulture, the horticulturist of the station; the professor of botany, the botanist of the station, etc. In such cases the salaries of these persons are paid in part from the college funds and in part from the station funds, thus enabling the colleges, as well as the stations, to obtain the services of specialists at a much less cost to each than would be possible if the stations were not in close proximity to the colleges. In but four States have the stations been established at places remote from the colleges. The staffs of the 44 stations established in connection with the agricultural colleges consist of 394 members.

The detailed statistics concerning the agricultural and mechanical colleges are given in Part IV of this report.

### VIII.—SCHOOLS OF THEOLOGY, LAW, AND MEDICINE.

(See Part IV, Tables 13-19, for the detailed statistics of individual schools.)

The number of students receiving professional instruction from year to year would not be expected to show any marked fluctuation, for the demand for such work increases only in a regular ratio, and unless the schools adopt new regulations the number of students would probably increase in the same ratio. The whole number of medical students in

1892-93 was 19,752. Of these the number in the regular medical schools was 16,130, an increase of about 1,200 over the previous year. The number of theological students was 7,839. During the last five years the number of theological students has increased with much uniformity, the figures being 6,989, 7,013, 7,328, 7,729, 7,839.

During the year 1892-93 the number of law students was 6,776. The number of law students has been increasing quite rapidly, the figures for the last five years being 3,906, 4,518, 5,252, 6,073, 6,776. This increase, however, may be more apparent than real; it may possibly be attributed to a larger number of young men seeking regular and systematic instruction in law schools rather than in the private offices of attorneys and counsellors.

*Summary of statistics of schools of theology for 1892-93.*

State.	Number of schools.	Professors and instructors.		Students.	
		Regular.	Special or assistant.	In attendance.	Graduating.
United States .....	142	714	148	7,836	1,502
North Atlantic Division .....	46	283	85	2,754	614
South Atlantic Division .....	19	103	11	884	117
South Central Division .....	15	60	17	776	117
North Central Division .....	56	246	32	3,353	641
Western Division .....	6	22	3	69	13
North Atlantic Division:					
Maine .....	2	11	1	64	18
Massachusetts .....	7	57	10	436	72
Connecticut .....	3	25	22	176	52
New York .....	12	71	20	808	169
New Jersey .....	5	28	3	435	101
Pennsylvania .....	17	91	24	835	202
South Atlantic Division:					
Maryland .....	4	38	0	355	45
District of Columbia .....	3	19	5	109	8
Virginia .....	3	15	1	176	33
North Carolina .....	3	10	1	58	0
South Carolina .....	4	12	4	97	22
Georgia .....	2	9	0	89	9
South Central Division:					
Kentucky .....	3	17	0	463	64
Tennessee .....	7	34	13	204	48
Alabama .....	2	4	1	50	5
Louisiana .....	2	3	0	26	0
Texas .....	1	2	3	33	0
North Central Division:					
Ohio .....	13	56	11	462	114
Indiana .....	3	11	0	183	18
Illinois .....	15	86	12	1,400	253
Michigan .....	3	9	0	70	8
Wisconsin .....	4	23	1	330	53
Minnesota .....	6	25	2	237	64
Iowa .....	7	20	2	317	41
Missouri .....	4	13	4	339	85
Nebraska .....	1	3	0	15	0
Western Division:					
Colorado .....	2	6	3	16	1
Oregon .....	1	3	0	2	0
California .....	3	13	0	51	12

*Summary of statistics of schools of law for 1892-93.*

State.	Number of schools.	Professors and instructors.		Students.	
		Regular.	Special or assist- ant.	In attend- ance.	Graduating.
United States.....	63	336	251	6,776	2,400
North Atlantic Division.....	12	102	84	2,533	710
South Atlantic Division.....	14	50	19	1,102	413
South Central Division.....	11	32	19	394	192
North Central Division.....	21	99	106	2,477	1,031
Western Division.....	5	53	23	270	54
North Atlantic Division:					
Massachusetts.....	2	22	12	613	114
Connecticut.....	1	7	25	171	81
New York.....	7	60	39	1,481	443
Pennsylvania.....	2	13	8	268	72
South Atlantic Division:					
Maryland.....	2				
District of Columbia.....	4	30	10	742	295
Virginia.....	2	5	0	212	53
West Virginia.....	1	2	0	22	13
North Carolina.....	2	5	0	61	10
South Carolina.....	1	1	0	15	
Georgia.....	2	7	9	50	42
South Central Division:					
Kentucky.....	1	3	0	40	20
Tennessee.....	5	13	13	142	76
Alabama.....	1	3	0	30	14
Mississippi.....	1	1	4	23	13
Louisiana.....	1	5	0	57	25
Texas.....	1	2	2	77	34
Arkansas.....	1	5	0	25	10
North Central Division:					
Ohio.....	2	18	0	234	116
Indiana.....	3	14	6	149	44
Illinois.....	5	18	18	414	156
Michigan.....	2	15	20	701	362
Wisconsin.....	1	5	5	166	89
Minnesota.....	1	2	13	277	83
Iowa.....	2	10	17	254	86
Missouri.....	2	7	17	144	25
Nebraska.....	1	3	10	53	28
Kansas.....	2	7		85	42
Western Division:					
Colorado.....	2	35	22	78	6
Oregon.....	2	15	1	71	25
California.....	1	3	0	121	23



*Summary of statistics of schools of medicine, dentistry, pharmacy, and for nurses and veterinarians for 1892-93.*

	Number of schools.	Professors and instructors.		Students.		
		Regular.	Special or assist- ant.	Inattend- ance.	Graduat- ing.	Per cent gradu- ating.
United States.....	246	2, 910	2, 027	28, 900	7, 232	25. 0
A.—BY CLASSES.						
Preparatory .....	2	17	0	48		
Regular .....	94	1, 202	1, 292	16, 130	4, 324	26. 8
Homeopathic .....	16	240	150	1, 445	394	27. 3
Eclectic .....	10	131	40	773	178	23. 0
Physio-medical .....	2	28	6	64	15	23. 4
Graduate .....	8	193	191	1, 292		
Total medical .....	132	1, 811	1, 679	19, 752	4, 911	24. 9
Dental .....	29	319	194	2, 352	6507	17. 8
Pharmaceutical .....	31	159	105	3, 394	827	24. 4
Nurse training .....	47	556	0	2, 338	786	33. 6
Veterinary .....	7	65	49	564	201	35. 6
B.—BY GEOGRAPHICAL DIVISIONS.						
North Atlantic .....	78	1, 010	827	11, 460	2, 634	23. 0
South Atlantic .....	30	257	195	2, 896	823	28. 4
South Central .....	24	197	182	3, 466	1, 146	33. 1
North Central .....	99	1, 259	728	10, 190	2, 425	23. 8
Western .....	15	187	95	888	204	23. 0
C.—BY STATES AND CLASSES.						
<i>Medical schools.</i>						
Regular:						
Maine .....	1	11	2	97	21	
New Hampshire .....	1	13	1	112	31	
Vermont .....	1	17	6	193	51	
Massachusetts .....	2	32	20	545	98	
Connecticut .....	1	9	17	76	16	
New York .....	9	117	215	2, 287	571	
Pennsylvania .....	5	53	192	1, 867	458	
Maryland .....	5	53	52	1, 111	359	
District of Columbia .....	4	39	67	423	82	
Virginia .....	2	15	19	222	53	
North Carolina .....	1	8	0	49	10	
South Carolina .....	1	8	8	70	12	
Georgia .....	4	26	12	317	142	
Kentucky .....	4	37	45	1, 342	539	
Tennessee .....	5	59	58	1, 060	398	
Alabama .....	1	8	12	139	33	
Louisiana .....	2	15	29	407	96	
Texas .....	1	8	8	25	2	
Arkansas .....	1	12	3	75	21	
Ohio .....	8	95	95	867	182	
Indiana .....	3	43	21	238	46	
Illinois .....	4	84	125	1, 386	347	
Michigan .....	3	63	43	707	144	
Minnesota .....	2	45	10	293	43	
Iowa .....	3	35	17	346	53	
Missouri .....	10	151	133	1, 394	411	
Nebraska .....	2	35	12	88	12	
Colorado .....	3	41	29	108	24	
Oregon .....	2	28	10	58	10	
California .....	3	42	31	313	59	
North Atlantic Division .....	20	252	453	5, 182	1, 246	
South Atlantic Division .....	17	149	158	2, 192	658	
South Central Division .....	14	139	155	3, 048	1, 089	
North Central Division .....	35	551	456	5, 229	1, 238	
Western Division .....	8	111	70	479	93	
United States .....	94	1, 202	1, 292	16, 130	4, 324	26. 8
Homeopathic:						
Massachusetts .....	1	18	21	156	41	
New York .....	2	41	30	171	36	
Pennsylvania .....	1	10	15	253	77	

*a* 1,238 of these were women.

*b* Number smaller than usual on account of change to 3-year course.

Summary of statistics of schools of medicine, dentistry, pharmacy, etc.—Continued.

	Number of schools.	Professors and instructors.		Students.		
		Regular.	Special or assist- ant.	In attend- ance.	Graduat- ing.	Per cent gradu- ating.
C.—BY STATES AND CLASSES—continued.						
Medical schools—Continued.						
Homeopathic—Continued.						
Maryland.....	1	15	14	29	2	.....
Ohio.....	2	36	7	154	40	.....
Illinois.....	3	58	34	379	122	.....
Michigan.....	1	5	5	74	20	.....
Minnesota.....	1	10	4	24	4	.....
Iowa.....	1	5	6	67	23	.....
Missouri.....	2	22	11	91	21	.....
California.....	1	20	3	47	8	.....
North Atlantic Division.....	4	69	66	580	154	.....
South Atlantic Division.....	1	15	14	29	2	.....
North Central Division.....	10	136	67	789	230	.....
Western Division.....	1	20	3	47	8	.....
United States.....	16	240	150	1,445	394	27.3
Eclectic:						
New York.....	1	17	7	65	13	.....
Georgia.....	1	7	1	63	29	.....
Ohio.....	2	21	7	338	64	.....
Illinois.....	1	18	4	80	23	.....
Indiana.....	1	16	0	24	9	.....
Iowa.....	1	10	0	22	5	.....
Missouri.....	1	12	13	82	18	.....
Nebraska.....	1	12	8	36	2	.....
California.....	1	18	0	63	15	.....
North Atlantic Division.....	1	17	7	65	13	.....
South Atlantic Division.....	1	7	1	63	29	.....
North Central Division.....	7	89	32	582	121	.....
Western Division.....	1	18	0	63	15	.....
United States.....	10	131	40	773	178	23.0
Graduate:						
New York.....	2	71	153	854	.....	.....
Pennsylvania.....	1	46	3	117	.....	.....
Louisiana.....	1	14	0	59	.....	.....
Illinois.....	3	49	9	245	.....	.....
Missouri.....	1	13	26	17	.....	.....
North Atlantic Division.....	3	117	156	971	.....	.....
South Central Division.....	1	14	0	59	.....	.....
North Central Division.....	4	62	35	262	.....	.....
United States.....	8	193	191	1,292	.....	.....
Dentistry.						
Massachusetts.....	2	18	28	180	35	.....
New York.....	1	5	7	286	47	.....
Pennsylvania.....	3	30	47	599	66	.....
Maryland.....	2	16	7	231	36	.....
District of Columbia.....	3	42	9	93	9	.....
Kentucky.....	1	9	5	45	6	.....
Tennessee.....	3	16	8	149	15	.....
Ohio.....	1	5	6	121	15	.....
Indiana.....	1	8	4	65	3	.....
Illinois.....	4	96	14	505	164	.....
Michigan.....	2	15	14	116	53	.....
Minnesota.....	1	10	10	61	12	.....
Iowa.....	1	12	8	130	6	.....
Missouri.....	2	19	9	143	7	.....

Summary of statistics of schools of medicine, dentistry, pharmacy, etc.—Continued.

	Number of schools.	Professors and instructors.		Students.		
		Regular.	Special or assist- ant.	In attend- ance.	Graduat- ing.	Per cent gradu- ating.
C.—BY STATES AND CLASSES—continued.						
<i>Dentistry—Continued.</i>						
Colorado.....	1	10	3	14	5	.....
California.....	1	8	15	114	28	.....
North Atlantic Division.....	6	53	82	1,065	148	.....
South Atlantic Division.....	5	58	16	324	45	.....
South Central Division.....	4	25	13	194	21	.....
North Central Division.....	12	165	65	1,141	260	.....
Western Division.....	2	18	18	128	33	.....
United States.....	29	319	194	2,852	507	17.8
<i>Pharmacy.</i>						
Massachusetts.....	1	6	6	272	23	.....
New York.....	3	12	15	455	151	.....
Pennsylvania.....	2	8	7	732	194	.....
Maryland.....	1	3	1	120	43	.....
District of Columbia.....	2	7	5	87	22	.....
Kentucky.....	2	8	8	78	17	.....
Tennessee.....	2	8	4	43	9	.....
Louisiana.....	1	3	2	44	10	.....
Ohio.....	3	18	7	151	37	.....
Indiana.....	1	4	4	88	22	.....
Illinois.....	2	15	3	611	136	.....
Michigan.....	2	11	11	109	27	.....
Wisconsin.....	1	14	13	65	14	.....
Minnesota.....	1	4	0	3	1	.....
Iowa.....	2	11	5	75	15	.....
Missouri.....	2	11	4	284	63	.....
Kansas.....	1	6	6	57	6	.....
Colorado.....	1	4	0	57	4	.....
California.....	1	6	4	103	33	.....
North Atlantic Division.....	6	26	28	1,459	368	.....
South Atlantic Division.....	3	10	6	207	65	.....
South Central Division.....	5	19	14	165	36	.....
North Central Division.....	15	94	53	1,443	321	.....
Western Division.....	2	10	4	120	37	.....
United States.....	31	159	105	3,394	827	24.4
<i>Nurse training.</i>						
Vermont.....	1	6	0	30	7	.....
Massachusetts.....	5	105	0	354	112	.....
Connecticut.....	1	3	0	80	12	.....
Rhode Island.....	1	18	0	34	14	.....
New York.....	15	140	0	786	249	.....
New Jersey.....	3	32	0	78	35	.....
Pennsylvania.....	7	116	0	387	172	.....
District of Columbia.....	2	14	0	64	24	.....
Indiana.....	1	9	0	23	8	.....
Illinois.....	1	17	0	140	61	.....
Michigan.....	2	18	0	81	25	.....
Minnesota.....	3	30	0	74	8	.....
Missouri.....	2	27	0	47	6	.....
Ohio.....	1	.....	.....	74	23	.....
Wisconsin.....	1	11	0	35	12	.....
California.....	1	10	0	51	18	.....
North Atlantic Division.....	33	420	0	1,749	601	.....
South Atlantic Division.....	2	14	0	64	24	.....
North Central Division.....	11	112	0	474	143	.....
Western Division.....	1	10	0	51	18	.....
United States.....	47	556	0	2,338	786	33.6



## IX.—NORMAL SCHOOLS.

In 1893, according to the returns made to the Bureau of Education, 52,008 students were pursuing teachers' training courses in the various institutions of the country. More than half these students, or 27,926, were in public normal schools. The private normal schools had 7,286 students preparing for the work of teaching. Many normal schools offer other courses of instruction, but the figures here given include only the number of students in the teachers' training courses proper. In the universities and colleges 5,232 normal students were reported, and 4,803 were found in the public high schools and 6,761 in the private high schools and academies. Normal students were found in 868 distinct institutions, but the number of graduates is given for only the 160 public and private normal schools. These sent out 5,043 graduates equipped with diplomas or certificates.

In Part IV of this report, Tables 20-22, the statistics of each of the public and private normal schools are given in detail. These two tables are followed by another giving a list of the 155 universities and colleges reporting students in the pedagogical or normal courses, showing the number of students in each.

In this chapter are printed the statistical summaries of normal schools and tables showing the number and location of other institutions in which normal students are pursuing their studies. The statistics of public normal schools will be found in Tables 1 and 2, and the corresponding items for private normal schools are given in Tables 3 and 4.

Table 1 gives the number of public normal schools in each State, the number of students, and the number of graduates. There were 121 schools, 1,301 instructors, 8,633 male students, 19,293 female students, and 4,491 graduates. From Table 2 it is seen that these schools had 17,777 students not in the teachers' training courses. There were 14,167 pupils reported in the model schools in connection with the public normals. Included in the total number of normal students were 2,935 in colored normal schools.

Tables 3 and 4 show that in the 39 normal schools under private management there were 268 teachers, 4,089 male normal students and 3,197 females, and 552 graduates. The number of students reported in other courses of study, 7,469, exceeded the number of normal students, which was 7,286. The number of colored normal students was 3,797. In the model schools connected with these private institutions 911 pupils are reported.

Of the total number of students, 45,703, in all courses of study in the public normal schools, 27,926, or over 61 per cent, are in the teachers' training courses, and less than 39 per cent, in other courses of study or departments. Of the total number of students in all courses of study in the private normal schools, 14,755, only 7,286, or 49 per cent, were in the teachers' training courses. The larger proportion, or 51 per cent, were in commercial and other departments.

Table 5 is a summary showing the income of public and private

normal schools, the amounts received by State, county, and city appropriations, the amount from tuition fees and from other sources. Public normal schools received \$1,452,914 for support from State, county, or city, and private schools received \$430 from the same sources. The public normals received from these sources \$816,826 for building and the private normals \$51,000. The public normals received \$372,428 from tuition fees and the private schools \$133,957. The amount received from benefactions was \$153,927 for public normal schools and \$151,386 for the private schools.

Table 6 shows the location of the 155 universities and colleges in which students are pursuing pedagogical courses. In these institutions are 5,232 normal students. This number includes 727 colored students.

Table 7 shows that in 264 public high schools there were 4,803 normal students, all white. In 289 private high schools there were 6,761 normal students, 484 of whom were colored.

Table 8 combines the figures in 6 and 7 and shows that in the 708 institutions not public and private normal schools there were 16,796 students pursuing teachers' training courses. Of these 1,211 were colored students.

The following table will show at a glance the distribution of the 52,008 normal students, in which kind of institutions they are found, and in what section or division of the United States:

State.	In public normal schools.	In private normal schools.	In universities and colleges.	In public high schools.	In private high schools.	Total.
United States.....	27,926	7,286	5,232	4,803	6,761	52,008
North Atlantic Division.....	11,988	259	550	1,893	1,379	16,069
South Atlantic Division.....	1,752	1,073	722	180	932	4,659
South Central Division.....	3,005	545	1,490	520	2,242	7,802
North Central Division.....	9,688	4,175	2,037	2,049	1,920	19,869
Western Division.....	1,493	1,234	433	161	288	3,609

Table 9 will indicate what has been done by the States, counties, and cities within the past five years for public normal schools. In 1888-89 the sums appropriated for the support of these schools amounted to \$1,284,453. The next year the amount appropriated for support was \$1,312,419 and for buildings \$900,533. In 1890-91 the amount for support was \$1,285,700 and for buildings \$409,916. The highest aggregate of appropriations for support was in 1891-92, when the amount reached \$1,567,082, but the appropriations for building that year amounted to only \$394,635. The highest total of appropriations was reached in 1892-93, when the amount was \$2,269,740. Of this aggregate \$1,452,914 was for support and \$816,826 for buildings.

It is known that the two lists comprising 160 public and private normal schools, published in Part V, do not include all the normal schools of the country. Only those institutions furnishing statistics to this Bureau appear in the lists. Repeated requests for information failed to bring responses from the others. It is hoped that the statistics of many of the schools omitted will appear in the next annual report.

TABLE 1.—*Number of instructors and students in public normal schools.*

State.	Schools.	Teaching staff.		Students in teachers' training courses.			
		For students in normal course.	Wholly for other departments.	Male.	Female.	Total.	Graduates.
United States.....	121	1,301	319	8,633	19,293	27,926	4,491
North Atlantic Division.....	55	649	185	2,930	9,058	11,988	2,465
South Atlantic Division.....	16	87	21	623	1,129	1,752	277
South Central Division.....	14	145	40	1,298	1,707	3,005	303
North Central Division.....	27	350	49	3,476	6,212	9,688	1,136
Western Division.....	9	70	24	306	1,187	1,493	305
North Atlantic Division:							
Maine.....	5	40	0	147	505	652	125
New Hampshire.....	2	8	6	0	98	98	27
Vermont.....	3	20	0	83	363	446	102
Massachusetts.....	11	94	49	64	1,149	1,213	362
Rhode Island.....	1	8	.....	0	191	191	26
Connecticut.....	2	59	.....	4	511	515	118
New York.....	15	188	74	417	2,780	3,197	752
New Jersey.....	3	19	31	42	574	616	160
Pennsylvania.....	13	213	25	2,173	2,887	5,060	793
South Atlantic Division:							
Delaware.....	1	11	.....	17	232	249	55
Maryland.....	2	14	0	4	71	75	75
District of Columbia.....	2	16	5	105	174	279	57
Virginia.....	5	23	7	374	363	737	70
West Virginia.....	3	10	3	119	218	337	10
North Carolina.....	1	6	.....	0	66	66	8
South Carolina.....	2	7	6	4	5	9	2
Georgia.....							
Florida.....							
South Central Division:							
Kentucky.....	1	21	.....	200	360	560	156
Tennessee.....	6	84	27	674	811	1,485	94
Alabama.....	1	3	1	83	99	182	12
Mississippi.....	2	16	9	38	165	203	36
Louisiana.....							
Texas.....	3	16	3	263	210	473	10
Arkansas.....	1	5	.....	40	62	102	0
Oklahoma.....							
Indian Territory.....							
North Central Division:							
Ohio.....	3	20	6	151	367	518	64
Indiana.....	2	27	6	500	473	973	24
Illinois.....	2	34	6	460	655	1,115	52
Michigan.....	2	44	1	286	739	1,025	204
Wisconsin.....	5	76	8	399	939	1,338	164
Minnesota.....	4	43	10	173	781	954	237
Iowa.....	2	24	0	214	598	812	130
Missouri.....	2	29	1	652	844	1,496	135
North Dakota.....	2	15	2	88	105	193	0
South Dakota.....	2	18	5	118	201	319	33
Nebraska.....							
Kansas.....	1	20	4	435	600	1,035	103
Western Division:							
Montana.....							
Wyoming.....							
Colorado.....	1	14	1	68	246	314	23
New Mexico.....							
Arizona.....							
Utah.....							
Nevada.....							
Idaho.....							
Washington.....	2	13	0	62	162	224	34
Oregon.....	3	20	8	106	157	263	59
California.....	3	23	15	70	622	692	189



TABLE 2.—*Number of other students in public normal schools.*

State.	Students in nonprofessional courses.			Children in model school.	Colored students.
	Male.	Female.	Total.		
United States .....	6,982	10,795	17,777	14,167	2,935
North Atlantic Division.....	4,098	5,958	10,056	8,588	126
South Atlantic Division.....	292	1,042	1,334	452	486
South Central Division.....	551	981	1,532	863	2,226
North Central Division.....	1,782	1,993	3,775	3,490	97
Western Division.....	259	821	1,080	774	0
North Atlantic Division:					
Maine.....	346	306	652	652	4
New Hampshire.....	0	0	0	236	0
Vermont.....	0	0	0	0	0
Massachusetts.....	1,277	523	2,200	2,139	72
Rhode Island.....	0	0	0	.....	0
Connecticut.....	231	1,577	1,808	1,366	6
New York.....	962	1,829	2,791	1,838	19
New Jersey.....	324	597	921	921	18
Pennsylvania.....	958	726	1,684	1,436	7
South Atlantic Division:					
Delaware.....	.....	.....	.....	.....	.....
Maryland.....	2	111	113	5	0
District of Columbia.....	199	610	800	400	25
Virginia.....	48	221	269	47	0
West Virginia.....	16	21	37	0	0
North Carolina.....	9	40	49	.....	385
South Carolina.....	0	0	0	0	0
Georgia.....	.....	.....	.....	.....	.....
Florida.....	27	39	66	0	75
South Central Division:					
Kentucky.....	.....	.....	.....	.....	.....
Tennessee.....	.....	.....	.....	.....	.....
Alabama.....	468	621	1,089	750	1,623
Mississippi.....	.....	.....	.....	.....	182
Louisiana.....	59	353	412	113	0
Texas.....	.....	.....	.....	.....	.....
Arkansas.....	24	7	31	0	221
Oklahoma.....	.....	.....	.....	0	0
Indian Territory.....	.....	.....	.....	.....	.....
North Central Division:					
Ohio.....	205	213	423	316	29
Indiana.....	0	0	0	.....	15
Illinois.....	421	385	806	551	26
Michigan.....	148	170	318	318	10
Wisconsin.....	273	327	600	473	0
Minnesota.....	311	321	632	913	11
Iowa.....	125	143	268	268	0
Missouri.....	100	167	267	267	0
North Dakota.....	35	44	79	168	0
South Dakota.....	24	16	40	70	1
Nebraska.....	.....	.....	.....	.....	.....
Kansas.....	140	262	342	146	5
Western Division:					
Montana.....	.....	.....	.....	.....	.....
Wyoming.....	.....	.....	.....	.....	.....
Colorado.....	57	74	131	131	0
New Mexico.....	.....	.....	.....	.....	.....
Arizona.....	.....	.....	.....	.....	.....
Utah.....	.....	.....	.....	.....	.....
Nevada.....	.....	.....	.....	.....	.....
Idaho.....	.....	.....	.....	.....	.....
Washington.....	20	40	60	140	0
Oregon.....	142	119	261	225	0
California.....	40	588	628	278	0

TABLE 3.—Number of instructors and students in private normal schools.

State.	Schools.	Teaching staff.		Students in teachers' training courses.			
		For students in normal course.	Wholly for other departments.	Male.	Female.	Total.	Graduates.
United States.....	39	268	184	4,089	3,197	7,286	552
North Atlantic Division.....	1	9	.....	107	152	259	12
South Atlantic Division.....	10	75	74	532	541	1,073	91
South Central Division.....	9	47	43	248	297	545	38
North Central Division.....	16	121	55	2,478	1,697	4,175	289
Western Division.....	3	16	12	724	510	1,234	122
North Atlantic Division:							
Maine.....							
New Hampshire.....							
Vermont.....							
Massachusetts.....							
Rhode Island.....							
Connecticut.....							
New York.....							
New Jersey.....							
Pennsylvania.....	1	9	.....	107	152	259	12
South Atlantic Division:							
Delaware.....							
Maryland.....							
District of Columbia.....							
Virginia.....	2	31	56	151	235	386	46
West Virginia.....	2	12	5	130	117	247	12
North Carolina.....	1	10	.....	44	38	82	2
South Carolina.....	3	8	13	32	56	88	12
Georgia.....							
Florida.....	2	14	0	175	95	270	19
South Central Division:							
Kentucky.....							
Tennessee.....	3	19	26	123	143	266	22
Alabama.....	2	10	5	82	125	207	3
Mississippi.....	2	9	0	25	26	51	8
Louisiana.....	1	2	7	11	1	12	1
Texas.....							
Arkansas.....	1	7	5	7	2	9	4
Oklahoma.....							
Indian Territory.....							
North Central Division:							
Ohio.....	1	18	15	681	428	1,109	103
Indiana.....	2	25	0	812	408	1,220	15
Illinois.....	4	21	19	703	502	1,205	94
Michigan.....	1	3	3	3	17	20	0
Wisconsin.....	1	16	.....	12	22	34	4
Minnesota.....							
Iowa.....	3	9	5	73	155	228	14
Missouri.....	2	24	5	160	149	309	39
North Dakota.....							
South Dakota.....							
Nebraska.....	1	1	.....	6	4	10	.....
Kansas.....	1	4	8	28	12	40	20
Western Division:							
Montana.....							
Wyoming.....							
Colorado.....							
New Mexico.....							
Arizona.....							
Utah.....	1	11	3	322	254	576	.....
Nevada.....							
Idaho.....							
Washington.....							
Oregon.....							
California.....	2	5	9	402	256	658	122

TABLE 4.—*Number of other students in private normal schools.*

State.	Students in nonprofessional courses.			Children in model school.	Colored students.
	Male.	Female.	Total.		
United States .....	4,314	3,155	7,469	911	3,797
North Atlantic Division.....	13	8	21	0	0
South Atlantic Division.....	884	859	1,743	136	2,021
South Central Division.....	549	763	1,312	447	1,770
North Central Division.....	2,679	1,415	4,094	328	6
Western Division.....	189	110	299	0	0
North Atlantic Division:					
Maine.....					
New Hampshire.....					
Vermont.....					
Massachusetts.....					
Rhode Island.....					
Connecticut.....					
New York.....					
New Jersey.....					
Pennsylvania.....	13	8	21	0	0
South Atlantic Division:					
Delaware.....					
Maryland.....					
District of Columbia.....					
Virginia.....	280	143	423	0	807
West Virginia.....	48	48	96	96	153
North Carolina.....	34	56	90		172
South Carolina.....	361	510	871	0	884
Georgia.....					
Florida.....	161	102	263	40	0
South Central Division:					
Kentucky.....					
Tennessee.....	307	417	724	306	990
Alabama.....	66	127	193	34	400
Mississippi.....	53	53	106	0	157
Louisiana.....	30	45	75		0
Texas.....					
Arkansas.....	93	121	214	107	223
Oklahoma.....					
Indian Territory.....					
North Central Division:					
Ohio.....	1,321	404	1,725	11	0
Indiana.....	0	0	0	0	0
Illinois.....	691	534	1,225	0	5
Michigan.....	25	13	38	0	0
Wisconsin.....	153	121	274	274	0
Minnesota.....					
Iowa.....	148	155	303	38	1
Missouri.....	61	68	129	5	0
North Dakota.....					
South Dakota.....					
Nebraska.....					
Kansas.....	280	120	400	0	0
Western Division:					
Montana.....					
Wyoming.....					
Colorado.....					
New Mexico.....					
Arizona.....					
Utah.....	79	9	83		
Nevada.....					
Idaho.....					
Washington.....					
Oregon.....					
California.....	110	101	211	0	0



TABLE 5.—*Income of public and private normal schools.*

State.	Public.				Private.			
	Receipts from tuition fees.	Appropriation from State, county, or city.		Amount of benefactions.	Receipts from tuition fees.	Appropriation from State, county, or city.		Amount of benefactions.
		For support during the year.	For building or repairs during the year.			For support during the year.	For building or repairs during the year.	
United States.....	\$372, 428	\$1, 452, 914	\$816, 826	\$153, 927	\$133, 957	\$130	\$51, 000	\$151, 386
North Atlantic Division...	255, 818	696, 603	485, 516	40, 000	—	0	0	0
South Atlantic Division...	4, 555	62, 268	33, 074	2, 500	9, 388	430	3, 000	99, 874
South Central Division...	17, 317	56, 344	24, 450	109, 427	11, 247	0	13, 000	23, 512
North Central Division...	85, 458	465, 319	163, 686	0	104, 960	0	35, 000	28, 000
Western Division.....	9, 280	172, 380	105, 100	2, 000	8, 362	0	0	0
North Atlantic Division:								
Maine.....	644	28, 600	2, 000	0	—	—	—	—
New Hampshire.....	399	12, 000	—	0	—	—	—	—
Vermont.....	2, 800	16, 100	1, 000	0	—	—	—	—
Massachusetts.....	645	121, 731	200, 000	0	—	—	—	—
Rhode Island.....	0	14, 000	—	0	—	—	—	—
Connecticut.....	4, 000	49, 000	75, 000	—	—	—	—	—
New York.....	15, 683	336, 645	92, 391	0	—	—	—	—
New Jersey.....	25, 697	28, 750	12, 000	0	—	—	—	—
Pennsylvania.....	205, 950	89, 777	103, 125	40, 000	—	0	0	0
South Atlantic Division:								
Delaware.....	—	—	—	—	—	—	—	—
Maryland.....	—	10, 500	2, 224	0	—	—	—	—
District of Columbia.....	—	—	—	0	—	—	—	—
Virginia.....	2, 763	17, 000	—	1, 000	1, 225	0	0	90, 874
West Virginia.....	1, 792	15, 000	27, 300	1, 200	—	0	0	4, 000
North Carolina.....	0	4, 300	150	300	—	0	—	—
South Carolina.....	—	5, 250	2, 000	—	3, 163	150	0	5, 000
Georgia.....	—	—	—	—	—	—	—	—
Florida.....	0	10, 218	1, 400	0	5, 000	280	3, 000	0
South Central Division:								
Kentucky.....	—	—	—	—	—	—	—	—
Tennessee.....	7, 801	1, 500	—	40, 000	5, 850	0	13, 000	19, 360
Alabama.....	9, 130	27, 604	200	67, 127	1, 797	0	0	74
Mississippi.....	—	2, 500	0	0	—	0	0	—
Louisiana.....	0	12, 500	1, 250	2, 300	—	0	0	—
Texas.....	—	—	—	—	—	—	—	—
Arkansas.....	386	6, 240	6, 000	—	3, 600	0	0	4, 078
Oklahoma.....	0	6, 000	17, 000	0	—	—	—	—
Indian Territory.....	—	—	—	—	—	—	—	—
North Central Division:								
Ohio.....	565	1, 500	—	0	48, 810	0	0	—
Indiana.....	1, 850	40, 000	40, 000	0	10, 000	0	0	0
Illinois.....	14, 364	56, 105	0	0	7, 400	0	35, 000	0
Michigan.....	7, 020	56, 647	20, 000	0	750	0	0	0
Wisconsin.....	21, 359	123, 417	2, 686	0	8, 000	0	0	18, 000
Minnesota.....	5, 255	76, 300	66, 000	0	—	—	—	—
Iowa.....	5, 635	21, 000	0	0	4, 000	0	0	0
Missouri.....	19, 770	26, 250	0	0	14, 000	0	0	10, 000
North Dakota.....	0	23, 000	40, 000	0	—	—	—	—
South Dakota.....	1, 640	21, 100	0	0	—	—	—	—
Nebraska.....	—	—	—	—	12, 000	—	—	—
Kansas.....	8, 000	20, 000	0	0	—	0	0	—
Western Division:								
Montana.....	—	—	—	—	—	—	—	—
Wyoming.....	—	—	—	—	—	—	—	—
Colorado.....	—	35, 000	20, 000	—	—	—	—	—
New Mexico.....	—	—	—	—	—	—	—	—
Arizona.....	—	—	—	—	—	—	—	—
Utah.....	—	—	—	—	—	—	—	—
Nevada.....	—	—	—	—	—	—	—	—
Idaho.....	—	—	—	—	—	—	—	—
Washington.....	0	43, 880	0	0	—	—	—	—
Oregon.....	8, 480	48, 000	10, 100	2, 000	—	—	—	—
California.....	800	45, 500	75, 000	0	8, 362	0	0	0

TABLE 6.—*Normal students in universities and colleges.*

	Institu- tions.	Male students.	Female students.	Male and female not reported separately.	White.	Colored.	Total.
United States .....	155	585	828	3,819	4,505	727	5,232
North Atlantic Division.....	14	180	341	341	550	.....	550
South Atlantic Division.....	19	146	240	336	489	233	722
South Central Division.....	43	188	432	870	1,039	451	1,490
North Central Division.....	66	71	103	1,863	1,994	43	2,037
Western Division .....	13	.....	24	409	433	.....	433
North Atlantic Division:							
Maine.....	1	.....	8	.....	8	.....	8
New Hampshire.....	.....	.....	.....	.....	.....	.....	.....
Vermont.....	.....	.....	.....	.....	.....	.....	.....
Massachusetts.....	2	3	21	.....	24	.....	24
Rhode Island.....	.....	.....	.....	.....	.....	.....	.....
Connecticut.....	.....	.....	.....	.....	.....	.....	.....
New York.....	3	.....	.....	199	199	.....	199
New Jersey.....	.....	.....	.....	.....	.....	.....	.....
Pennsylvania.....	8	177	.....	142	319	.....	319
South Atlantic Division:							
Delaware.....	2	.....	.....	6	146	6	152
Maryland.....	1	146	.....	6	6	.....	6
District of Columbia.....	.....	.....	.....	.....	.....	.....	.....
Virginia.....	1	.....	.....	4	4	.....	4
West Virginia.....	1	.....	.....	60	60	.....	60
North Carolina.....	3	.....	28	25	53	.....	53
South Carolina.....	3	.....	6	94	6	94	100
Georgia.....	7	.....	206	135	208	133	341
Florida.....	1	.....	.....	6	6	.....	6
South Central Division:							
Kentucky.....	9	.....	267	78	341	4	345
Tennessee.....	15	40	40	403	309	174	483
Alabama.....	3	.....	14	179	43	150	193
Mississippi.....	5	19	104	13	103	33	136
Louisiana.....	3	124	.....	85	124	85	209
Texas.....	6	5	7	62	69	5	74
Arkansas.....	2	.....	.....	50	50	.....	50
Oklahoma.....	.....	.....	.....	.....	.....	.....	.....
Indian Territory.....	.....	.....	.....	.....	.....	.....	.....
North Central Division:							
Ohio.....	10	12	8	313	290	43	333
Indiana.....	4	.....	.....	115	115	.....	115
Illinois.....	8	40	90	115	245	.....	245
Michigan.....	5	.....	.....	100	100	.....	100
Wisconsin.....	2	.....	4	13	17	.....	17
Minnesota.....	3	9	.....	28	37	.....	37
Iowa.....	10	10	.....	555	565	.....	565
Missouri.....	9	.....	.....	248	248	.....	248
North Dakota.....	1	.....	.....	28	28	.....	28
South Dakota.....	4	.....	.....	148	148	.....	148
Nebraska.....	4	.....	.....	72	72	.....	72
Kansas.....	6	.....	1	128	126	.....	129
Western Division:							
Montana.....	.....	.....	.....	.....	.....	.....	.....
Wyoming.....	.....	.....	.....	.....	.....	.....	.....
Colorado.....	1	.....	.....	4	4	.....	4
New Mexico.....	1	.....	.....	63	63	.....	63
Arizona.....	.....	.....	.....	.....	.....	.....	.....
Utah.....	1	.....	.....	203	203	.....	203
Nevada.....	1	.....	.....	40	40	.....	40
Idaho.....	.....	.....	.....	.....	.....	.....	.....
Washington.....	3	.....	.....	33	33	.....	33
Oregon.....	3	.....	.....	38	38	.....	38
California.....	3	.....	24	28	52	.....	52

TABLE 7.—Normal students in public and private secondary schools.

State.	In public high schools.				In private high schools.					
	Schools.	Male students.	Female students.	Total all white	Schools.	Male students.	Female students.	White.	Colored.	Total.
United States.....	264	1,209	3,594	4,803	289	3,030	3,731	6,277	484	6,761
North Atlantic Division...	90	247	1,646	1,893	67	447	932	1,379	.....	1,379
South Atlantic Division...	15	75	105	180	56	503	429	718	214	992
South Central Division...	39	228	292	520	83	1,107	1,135	1,972	270	2,242
North Central Division...	110	641	1,408	2,049	66	825	1,035	1,920	.....	1,920
Western Division.....	10	18	143	161	17	148	149	288	.....	288
North Atlantic Division:										
Maine.....	2	1	23	24	6	47	117	164	.....	164
New Hampshire.....	1	.....	5	5	2	.....	24	24	.....	24
Vermont.....	3	14	37	51	2	5	14	19	.....	19
Massachusetts.....	2	.....	10	10	4	1	21	22	.....	22
Rhode Island.....	.....	.....	.....	.....	1	.....	2	2	.....	2
Connecticut.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
New York.....	55	174	789	963	28	119	308	427	.....	427
New Jersey.....	6	10	64	74	2	20	15	35	.....	35
Pennsylvania.....	21	48	718	766	22	255	431	666	.....	666
South Atlantic Division:										
Delaware.....	.....	.....	.....	.....	1	2	1	3	.....	3
Maryland.....	4	28	47	75	4	9	8	17	.....	17
District of Columbia.....	.....	.....	.....	.....	1	100	.....	100	.....	100
Virginia.....	6	20	32	52	10	28	68	47	40	96
West Virginia.....	.....	.....	.....	.....	1	30	27	57	.....	57
North Carolina.....	.....	.....	.....	.....	19	147	173	251	69	320
South Carolina.....	.....	.....	.....	.....	7	56	51	33	74	107
Georgia.....	4	23	12	35	11	103	88	169	22	191
Florida.....	1	4	14	18	2	28	13	41	.....	41
South Central Division:										
Kentucky.....	8	53	78	131	11	195	222	417	.....	417
Tennessee.....	4	18	22	40	22	292	193	485	.....	485
Alabama.....	3	7	20	27	4	26	28	39	15	54
Mississippi.....	6	47	68	115	18	272	332	537	37	604
Louisiana.....	.....	.....	.....	.....	5	6	24	21	9	30
Texas.....	14	86	86	172	14	215	224	266	173	439
Arkansas.....	4	17	18	35	8	98	92	154	56	190
Oklahoma.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Indian Territory.....	.....	.....	.....	.....	1	3	20	23	.....	23
North Central Division:										
Ohio.....	26	243	290	533	9	111	137	248	.....	248
Indiana.....	2	.....	10	10	4	86	88	174	.....	174
Illinois.....	8	57	78	135	5	48	89	137	.....	137
Michigan.....	10	25	79	104	1	32	45	77	.....	77
Wisconsin.....	18	95	182	277	6	39	31	70	.....	70
Minnesota.....	4	10	58	68	2	30	25	55	.....	55
Iowa.....	16	41	198	239	8	132	184	316	.....	316
Missouri.....	12	54	233	337	15	202	243	445	.....	445
North Dakota.....	.....	.....	.....	.....	1	12	18	30	.....	30
South Dakota.....	2	.....	6	6	3	46	79	125	.....	125
Nebraska.....	8	64	133	197	6	34	63	97	.....	97
Kansas.....	4	52	91	143	6	53	93	146	.....	146
Western Division:										
Montana.....	.....	.....	.....	.....	1	.....	4	4	.....	4
Wyoming.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Colorado.....	2	.....	5	5	1	.....	3	3	.....	3
New Mexico.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Arizona.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Utah.....	.....	.....	.....	.....	2	40	35	75	.....	75
Nevada.....	2	8	22	30	.....	.....	.....	.....	.....	.....
Idaho.....	1	.....	3	3	.....	.....	.....	.....	.....	.....
Washington.....	1	7	10	17	3	15	27	42	.....	42
Oregon.....	2	3	7	10	4	8	50	58	.....	58
California.....	2	.....	96	96	6	85	21	106	.....	106



TABLE 8.—Total number of normal students in universities and colleges, public and private high schools.

State.	Institutions.	Male students.	Female students.	Male and female not reported separately.	White.	Colored.	Total.
United States .....	708	4, 817	8, 146	3, 833	15, 585	1, 211	16, 796
North Atlantic Division.....	171	874	2, 607	341	3, 822	.....	3, 822
South Atlantic Division.....	90	724	774	336	1, 287	447	1, 834
South Central Division.....	165	1, 516	1, 852	884	3, 531	721	4, 252
North Central Division.....	242	1, 537	2, 606	1, 863	5, 963	43	6, 006
Western Division.....	40	166	307	400	882	.....	882
North Atlantic Division:							
Maine.....	9	48	148	.....	196	.....	196
New Hampshire.....	3	.....	29	.....	29	.....	29
Vermont.....	5	19	51	.....	70	.....	70
Massachusetts.....	8	4	52	.....	56	.....	56
Rhode Island.....	1	.....	2	.....	2	.....	2
Connecticut.....	.....	.....	.....	.....	.....	.....	.....
New York.....	86	293	1, 097	199	1, 589	.....	1, 589
New Jersey.....	8	30	79	.....	109	.....	109
Pennsylvania.....	51	480	1, 149	142	1, 771	.....	1, 771
South Atlantic Division:							
Delaware.....	1	2	1	.....	3	.....	3
Maryland.....	10	183	55	6	238	6	244
District of Columbia.....	2	100	.....	6	106	.....	106
Virginia.....	17	48	100	4	103	49	152
West Virginia.....	2	30	27	60	117	.....	117
North Carolina.....	22	147	201	25	304	69	373
South Carolina.....	10	56	57	94	39	168	207
Georgia.....	22	126	306	135	412	155	567
Florida.....	4	32	27	6	65	.....	65
South Central Division:							
Kentucky.....	28	248	567	78	889	4	893
Tennessee.....	41	350	255	403	565	174	1, 008
Alabama.....	10	33	62	179	109	165	274
Mississippi.....	29	338	504	13	785	70	855
Louisiana.....	8	130	24	85	145	94	239
Texas.....	34	306	317	62	507	178	685
Arkansas.....	14	108	103	64	239	36	275
Oklahoma.....	.....	.....	.....	.....	.....	.....	.....
Indian Territory.....	1	3	20	.....	23	.....	23
North Central Division:							
Ohio.....	45	366	435	313	1, 071	43	1, 114
Indiana.....	10	86	98	115	299	.....	299
Illinois.....	21	145	257	115	517	.....	517
Michigan.....	16	57	124	100	281	.....	281
Wisconsin.....	26	134	217	13	364	.....	364
Minnesota.....	9	49	83	28	160	.....	160
Iowa.....	34	183	382	555	1, 120	.....	1, 120
Missouri.....	36	256	526	248	1, 030	.....	1, 030
North Dakota.....	2	12	18	28	58	.....	58
South Dakota.....	9	46	85	148	279	.....	279
Nebraska.....	18	98	196	72	366	.....	366
Kansas.....	16	105	185	128	418	.....	418
Western Division:							
Montana.....	1	.....	4	.....	4	.....	4
Wyoming.....	.....	.....	.....	.....	.....	.....	.....
Colorado.....	4	.....	8	4	12	.....	12
New Mexico.....	1	.....	.....	63	63	.....	63
Arizona.....	.....	.....	.....	.....	.....	.....	.....
Utah.....	3	40	35	203	278	.....	278
Nevada.....	3	8	22	40	70	.....	70
Idaho.....	1	.....	3	.....	3	.....	3
Washington.....	7	22	37	33	92	.....	92
Oregon.....	9	11	57	38	106	.....	106
California.....	11	85	141	28	254	.....	254

TABLE 9.—*Appropriations for normal schools from States, counties, and cities for five years.*

State.	1888-89.		1889-90.		1890-91.		1891-92.		1892-93.	
	For support.	For building.	For support.	For building.	For support.	For building.	For support.	For building.	For support.	For building.
United States	\$1, 284, 453	\$1, 312, 419	\$900, 533	\$409, 916	\$1, 567, 082	\$394, 625	\$1, 452, 914	\$816, 826		
North Atlantic Division										
Maine	624, 937	680, 380	638, 143	225, 412	702, 284	169, 050	696, 603	485, 516		
New Hampshire	96, 392	86, 380	12, 130	5, 900	93, 260	42, 624	62, 208	33, 074		
South Atlantic Division	91, 875	90, 190	70, 760	86, 329	83, 600	11, 948	56, 344	24, 450		
North Central Division	379, 249	380, 591	167, 006	453, 006	71, 539	100, 913	465, 319	168, 686		
Western Division	92, 000	78, 182	12, 500	104, 500	66, 565	70, 100	172, 380	105, 100		
North Atlantic Division:										
Maine	20, 165	18, 300	9, 800	20, 000	24, 650	5, 000	28, 600	2, 000		
New Hampshire	11, 800	9, 000	60, 000	7, 000	9, 000	0	12, 000	0		
Vermont	8, 664	9, 610	7, 176	7, 176	8, 676	0	16, 100	1, 000		
Massachusetts	93, 583	90, 770	304, 100	74, 450	105, 011	25, 500	121, 731	200, 000		
Rhode Island	12, 000	13, 973	0	12, 874	0	14, 000	0	14, 000		
Connecticut	21, 580	21, 520	25, 000	20, 000	34, 600	0	40, 000	75, 000		
New York	308, 774	354, 061	54, 243	335, 081	70, 633	44, 550	336, 645	92, 391		
New Jersey	22, 123	22, 516	40, 000	24, 276	21, 500	94, 000	28, 750	12, 000		
Pennsylvania	126, 247	140, 000	145, 000	53, 528	150, 000	0	89, 777	103, 125		
South Atlantic Division:										
Delaware	10, 500	10, 500	0	10, 500	0	2, 224	10, 500	2, 224		
Maryland	55, 500	45, 329	3, 800	47, 000	58, 500	0	17, 000	0		
District of Columbia	14, 072	12, 380	6, 330	14, 630	13, 430	40, 400	15, 000	27, 300		
Virginia	6, 500	5, 017	0	5, 200	0	0	4, 300	150		
West Virginia	1, 020	1, 050	0	1, 050	0	0	5, 250	2, 000		
North Carolina	8, 000	8, 000	2, 000	8, 000	3, 780	0	10, 218	1, 400		
South Carolina	2, 600	4, 320	0	4, 320	0	0	1, 500	0		
Georgia	27, 075	25, 710	2, 250	31, 419	3, 000	4, 000	27, 604	200		
Florida	4, 000	4, 520	510	4, 520	0	0	2, 500	0		
Alabama	35, 500	32, 500	65, 000	20, 000	10, 000	2, 500	12, 500	1, 250		
Louisiana	2, 600	3, 000	0	4, 973	0	0	6, 240	6, 000		
Texas	0	0	0	0	0	0	0	17, 000		
Arkansas	0	0	0	0	0	0	0	0		
Oklahoma	0	0	0	0	0	0	0	0		
Indian Territory	0	0	0	0	0	0	0	0		
North Central Division:										
Ohio	4, 650	4, 500	0	5, 000	6, 000	0	1, 500	0		
Indiana	31, 000	31, 000	150, 000	30, 000	41, 100	0	40, 000	40, 000		
Illinois	79, 553	82, 704	4, 000	96, 979	100, 104	0	56, 105	0		

Michigan.....	42,875	42,875	0	36,360	1,139	49,908	4,000	56,647	20,000
Wisconsin.....	2,000	50,000	0	86,142	15,000	121,201	22,913	129,417	2,686
Minnesota.....	50,000	57,500	0	58,500	15,000	68,500	25,000	76,500	66,000
Iowa.....	38,300	22,050	0	21,500	8,400	25,000	6,000	21,000	0
Missouri.....	62,121	35,000	0	53,000	10,000	57,250	0	26,250	0
North Dakota.....	47,250	28,500	0	24,000	20,000	13,500	40,000	27,000	40,000
South Dakota.....	17,550	20,787	13,000	18,850	13,000	21,500	0	21,500	0
Nebraska.....	3,650	3,175	0	22,175	0	23,625	3,000	21,500	0
Kansas.....									
Western Division:									
Montana.....									
Wyoming.....									
Colorado.....									
New Mexico.....						35,000	30,000	35,000	20,000
Arizona.....									
Utah.....	6,000	6,000	0	7,000	0	6,000	0		
Nevada.....									
Idaho.....									
Washington.....									
Oregon.....		682	0	10,150	1,500	28,300	0	43,880	0
California.....	86,000	71,500	12,500	100	65,000	903	1,100	48,000	13,100
				78,250		90,500	39,000	45,500	75,000





## CHAPTER II.

### ILLITERACY IN THE UNITED STATES.<sup>1</sup>

(See tables, pp. 125-144.)

The three principal elements composing the population of the United States are the native whites, the foreign-born whites, and the blacks. In discussing the statistics of illiteracy it seems important to deal with these elements separately and then to inquire what influence one element may have upon each of the others or upon the other two combined. The total population of the country in 1890 was 62,622,250. The native-born whites numbered 45,862,023, or 73.24 per cent; the foreign-born whites numbered 9,121,867, or 14.57 per cent, and the colored population was 7,638,360, or 12.19 per cent of the whole. It is found that the smallest per cent of illiteracy belongs to the native white population and the greatest to the colored population. The foreign-born whites occupy an intermediate position on the scale.

The illiteracy tables have been arranged so that the 1890, 1880, and 1870 statistics can be easily compared. Seven of these comparative tables are given on as many pages, compiled from the census reports. To facilitate a comparative study of the facts made prominent by the three censuses the tables have been rearranged by the statistician of this Bureau and in some cases new computations made.

The seven tables now show for 1890, for 1880, and for 1870 the total population 10 years of age and over, the number of illiterates, and the per cent of illiterates to the population 10 years of age and above for each of the States and Territories, giving these numbers and percentages for the total, for males, females, native whites, foreign-born whites, total whites, and for the colored population. The figures are arranged by divisions, so that the five great sections of the United States can be compared or contrasted with each other or with the country as a whole.

In the first column of Table 1 is given the population 10 years of age and over for each State and Territory, for each of the five sections, and for the United States in 1890. The second column shows the number of illiterates and the third column gives the per cent of illiterates to the population 10 years of age and over. The next three columns on the same page give the corresponding items for 1880 and the remaining three show the corresponding figures for 1870.

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<sup>1</sup> By Alex. Summers statistician of the Bureau.

In 1890, of a total population of 62,622,250, the number 10 years of age and over was 47,413,559. Of this number 6,324,702 could not read and write. These illiterates comprised 13.3 per cent of the population 10 years of age and above. A comparison of these figures with the corresponding figures of 1880 will show a most gratifying decrease in the percentage of illiteracy. Of the total population of 50,155,783 in 1880 the number 10 years of age and over was 36,761,607 and the number of illiterates was 6,239,958. Then the per cent of illiterates was 17. While the total population of the country increased 12,466,467, or almost 25 per cent, the number of illiterates increased only 84,744, or about  $1\frac{1}{3}$  per cent. So the actual rate of illiteracy fell from 17 per cent in 1880 to 13.3 per cent in 1890, a difference of 3.7 in the rates, an actual reduction of nearly 22 per cent in the percentage. Had the same rate obtained for 1890 as for 1880 the number of illiterates in 1890 would have been 8,060,305 rather than 6,324,702, and the actual gain in numbers would have been 1,820,347 rather than 84,744.

These figures will give some idea of the progress in elementary education which the United States must have made in the ten years in order to make so marked a reduction in the per cent and in the comparative number of illiterates. This fact is illustrated by diagram 1, which is a graphic comparison of the statistics of 1890, 1880, and 1870.

A further examination of Table 1, under the 1890 column, will show the relative standing of the States and sections in regard to illiteracy. The percentage of illiteracy is smallest in the North Central Division and greatest in the South Atlantic, being 5.7 for the former and 30.9 for the latter. In the South Central Division the per cent of illiterates is 29.7, in the North Atlantic 6.2, and in the Western Division 8.3. The State having the smallest percentage of illiteracy is Nebraska, with 3.1, and that having the largest Louisiana, with 45.8.

The accompanying chart will indicate the relative density of illiteracy in the States and Territories.

A glance at Table 14 will find the relative rank or standing of the States and Territories for the years 1890, 1880, and 1870, those States showing the smallest per cents of illiteracy standing at the tops of the columns.

Diagram 2 shows graphically the relative standing of the five divisions in 1890, 1880, and 1870. Diagram 4 shows the rank of each State in 1890 according to the percentages of illiteracy.

The most interesting study of Table 1 is that which will reveal the relative progress made by the several States and sections between 1880 and 1890. The North Atlantic Division shows no change in the per cent of illiterates. While the rate remained at 6.2 the actual number of illiterates had increased from 699,369 to 859,989. In the North Central Division the per cent of illiteracy dropped from 6.7 to 5.7, but the number increased from 853,020 to 964,268, and in the Western Division the rate fell from 11.3 to 8.3, while the number of illiterates increased



from 155,150 to 199,686. Only in the two Southern sections was there actual decrease in the number of illiterates. As a consequence the decrease in the percentage of illiteracy was very great. In the South Atlantic Division the number decreased from 2,129,830 in 1880 to 1,981,888 in 1890, and the per cent fell from 40.3 to 30.9. In the South Central Division the improvement was quite as marked, the number falling from 2,402,589 to 2,318,871 and the per cent from 39.5 to 29.7.

Between 1880 and 1890 all the Southern States actually decreased their numbers of illiterates, as well as the percentages, excepting Alabama, Louisiana, and Arkansas. In the other divisions the States of Indiana and Missouri and the Territories of New Mexico and Utah alone show decrease in the actual number of illiterates. For purposes of comparison Missouri should be classed with the Southern States, but in the census classification it is in the North Central Division where the geographical position of the State properly places it.

In the United States nine States and one Territory increased their rates of illiteracy between 1880 and 1890, four in the North Atlantic Division, three in the North Central, and three in the Western Division. Maine, New Hampshire, Vermont, New Jersey, Michigan, Wisconsin, North Dakota, Montana, Arizona, and Nevada increased not only their number of illiterates, but their rates as well.

In justice to North Dakota it should be noted that the rate of illiteracy in 1890 is compared with the percentage for the entire Territory of Dakota in 1880. This comparison may show a higher rate of increase for North Dakota and a greater rate of decrease in the per cent of illiterates for South Dakota than is equitable.

Table 11 is a comparison of the rates of illiteracy in all the States for the census years 1890 and 1880 for all classes.

Table 12 shows the differences between the percentages of illiteracy for the several States in 1880 and 1890 for all classes. Those whose rates of illiteracy increased are marked with the + sign and those whose rates were less in 1890 than in 1880 are marked with the — sign.

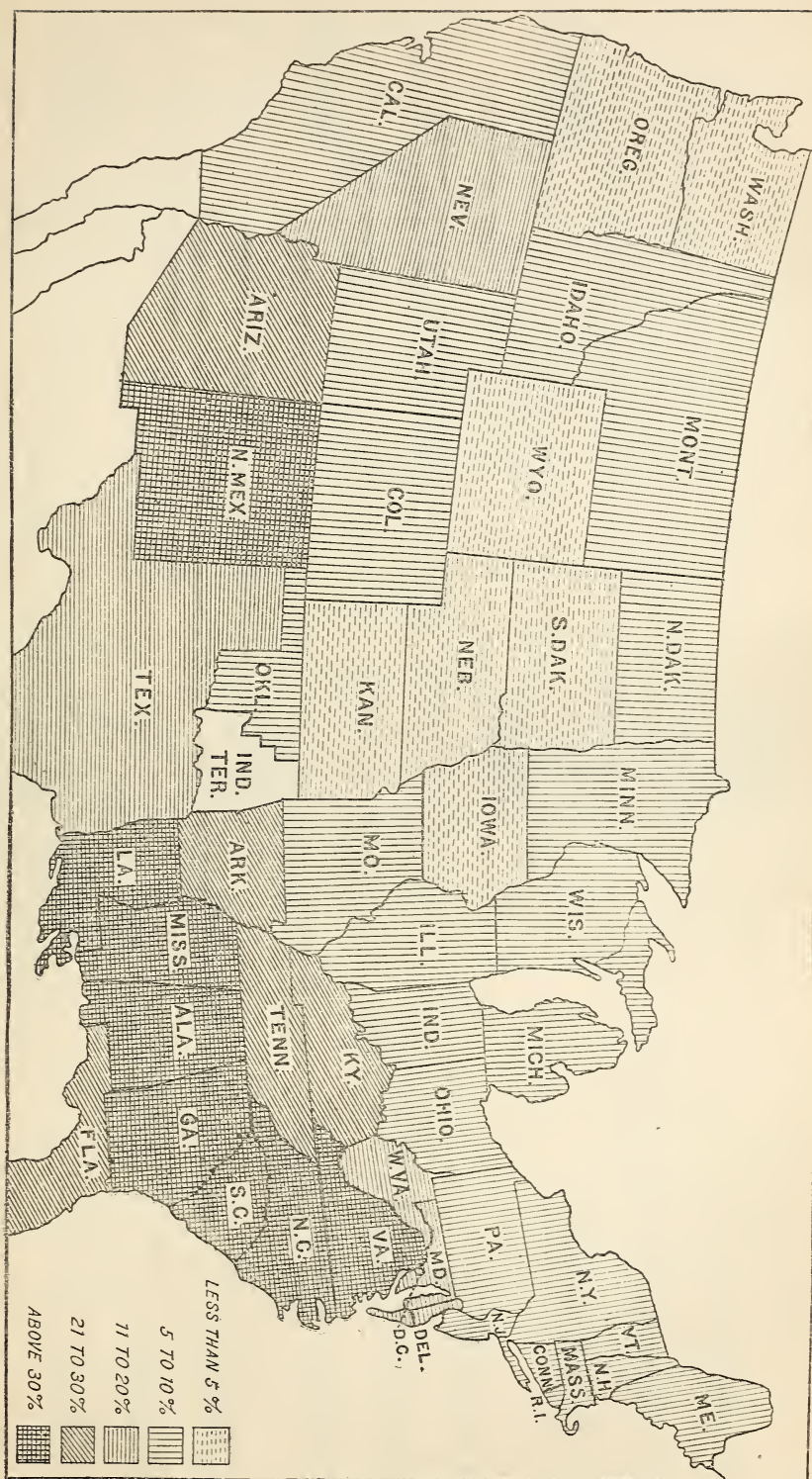
Table 13 is derived from 11 and 12 and shows for each State and division the per cent of decrease or increase in the percentage of illiterates between 1880 and 1890. These rates are computed for each element of population and are the figures which indicate the relative progress made in the ten years in overcoming the mass of illiteracy which existed in 1880. In the table the — sign indicates decrease in the percentage of illiteracy, and the + sign denotes increase in the rate. A glance at the first column will show that in ten States there was increase in the rates. For the whole country there was a decrease in the rate from 17.0 in 1880 to 13.3 in 1890, or a 21.8 per cent decrease in the percentage. This figure, 21.8, is a measure of the actual progress made in reducing the relative ratio of illiteracy to the total population.

Diagram 5 shows the rank of each State in 1890, graded according to the rate of progress or retrogression made by each in the preceding

decade. The open lines mark the States which decreased their rates of illiteracy, and the dark lines are placed opposite the States which retrograded or increased their per cents of illiterates.

An idea of the relative progress made by the several States may be obtained by a study of this diagram in connection with the first column of Table 13, which it graphically illustrates. Washington stands at the head of the list on the diagram marked with 38.6 per cent. This is the per cent of difference between Washington's rates of illiteracy in 1880 and 1890. This means that Washington overcame a greater per cent of the illiteracy of the State than any other State or Territory.

*Chart showing the relative density of illiteracy in the States in 1890.*





1890.

TOTAL POPULATION,  
62,622,250.

POPULATION, 10 YEARS OF AGE AND OVER,  
47,413,559.

NUMBER OF ILLITERATES,  
6,324,702.

1880.

TOTAL POPULATION,  
50,155,738.

POPULATION, 10 YEARS OF AGE AND OVER,  
36,761,607.

NUMBER OF ILLITERATES,  
6,239,958.

1870.

TOTAL POPULATION,  
38,558,371.

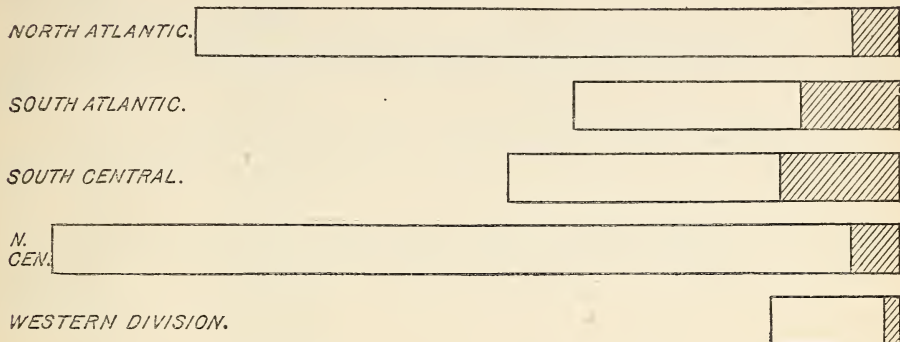
POPULATION, 10 YEARS OF AGE AND OVER,  
28,228,945.

NUMBER OF ILLITERATES,  
5,658,144.

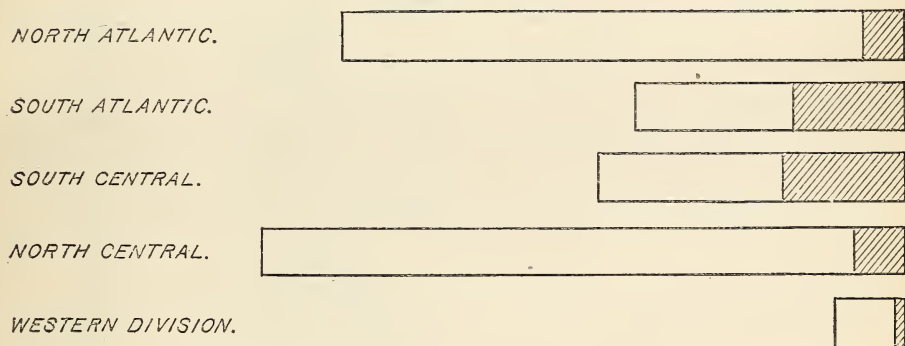
DIAGRAM 1.—Showing relative number illiterates to population.

DIAGRAM 2.—Showing proportion of illiterates to number 10 years of age and over in each division for 1890, 1880, and 1870.

1890.



1880.



1870.

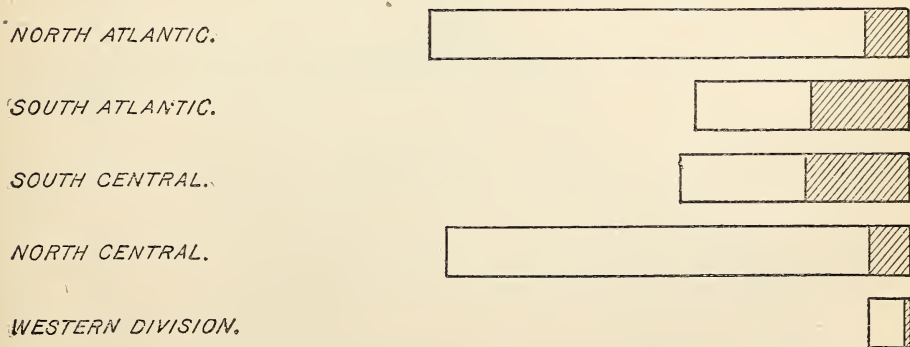
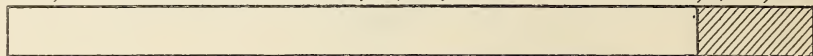


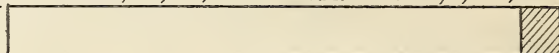
DIAGRAM 3.—Showing relative number illiterates in three classes of population, 10 years of age and over.

## 1890.

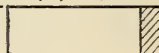
POPULATION, 10 YEARS OF AGE AND OVER, 47,413,559. ILLITERATES, 6,324,702.



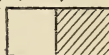
NATIVE WHITES, 10 YRS OF AGE AND OVER, 33,144,187. ILLITERATES, 2,065,003.



FOREIGN WHITES, 10 YRS OF AGE AND OVER, 8,736,887. ILLITERATES, 1,147,571.

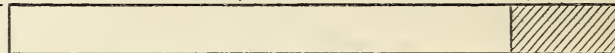


COLORED, 10 YEARS OF AGE AND OVER, 5,482,485. ILLITERATES, 3,112,128.

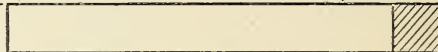


## 1880.

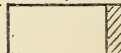
POPULATION, " " 36,761,607. ILLITERATES, 6,239,958.



NATIVE WHITES, " " 25,785,789. " 2,255,400.



FOREIGN WHITES, " " 6,374,611. " 763,620.

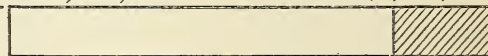


COLORED, " " 4,601,207. " 3,220,878.



## 1870.

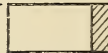
POPULATION, " " 28,228,945. ILLITERATES, 5,658,144.



NATIVE WHITES, " " 19,347,967. " 2,081,233.



FOREIGN WHITES, " " 5,369,903. " 770,678.



COLORED, " " 3,511,075. " 2,806,233.





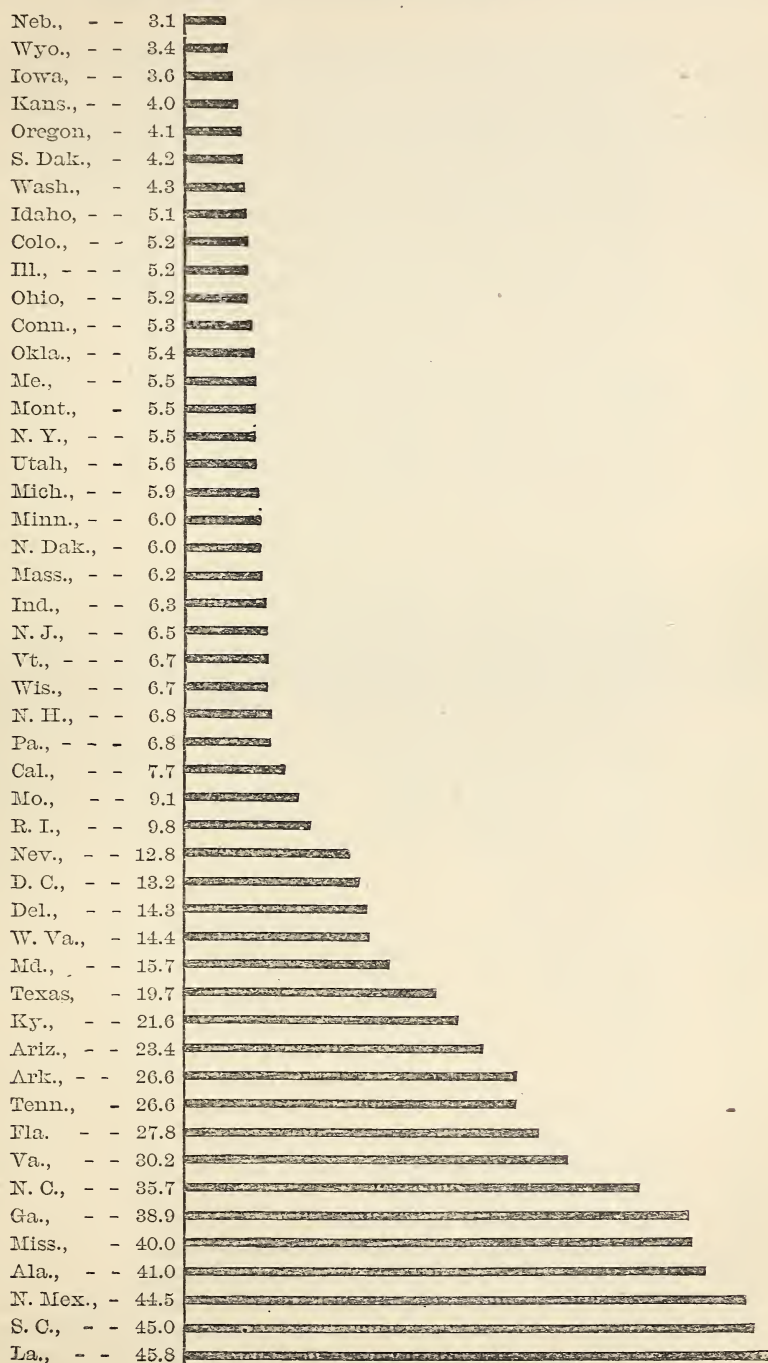
DIAGRAM 4.—*Showing the rank of each State according to the rates of illiteracy in 1890.*

DIAGRAM 5.—*Showing the rank of each State according to the per cent of decrease or increase of the rates of illiteracy between 1880 and 1890.*

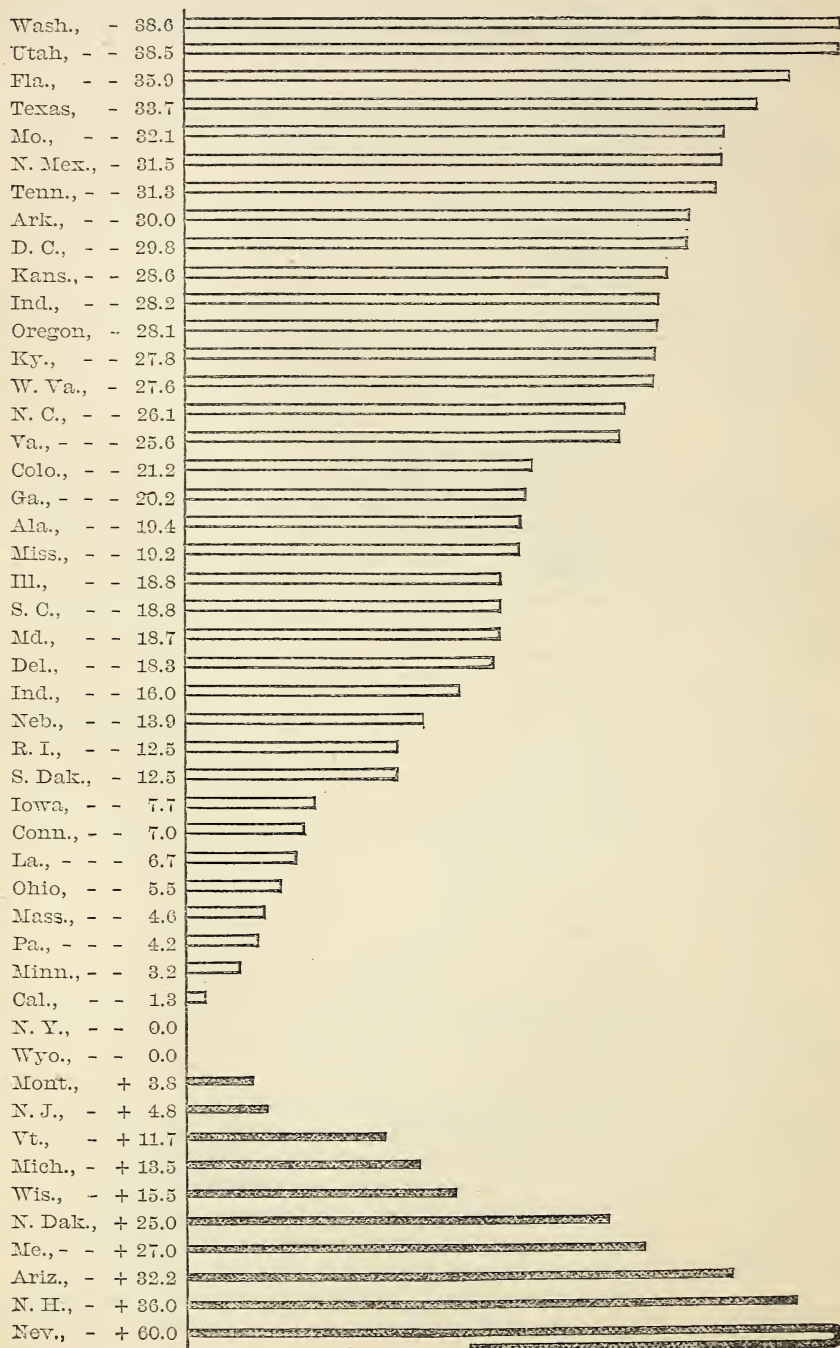


TABLE 1.—Population 10 years of age and over.

States and Territories.	1890.			1880.			1870.		
	Total.	Illiterates.		Total.	Illiterates.		Total.	Illiterates.	
		Number.	Per cent.		Number.	Per cent.		Number.	Per cent.
United States.	47,412,559	6,324,702	13.3	36,761,607	6,239,958	17.0	28,228,945	5,658,144	20.0
North Atlantic Division.	13,888,377	859,989	6.2	11,270,090	699,369	6.2	9,430,802	712,277	7.6
South Atlantic Division.	6,415,921	1,981,888	30.9	5,286,645	2,129,830	40.3	4,207,398	1,943,166	46.2
South Central Division.	7,799,487	2,318,871	29.7	6,076,243	2,402,589	39.5	4,548,220	2,024,395	44.5
North Central Division.	16,909,613	964,268	5.7	12,760,841	853,020	6.7	9,292,434	865,017	9.3
Western Division.	2,400,161	199,686	8.3	1,367,788	155,150	11.3	750,101	112,389	15.0
North Atlantic Division:									
Maine.	541,662	29,587	5.5	519,669	22,170	4.3	493,847	19,052	3.9
New Hampshire.	315,497	21,476	6.8	286,188	14,302	5.0	260,426	9,926	3.8
Vermont.	271,173	18,154	6.7	264,052	15,837	6.0	253,751	17,706	6.8
Massachusetts.	1,839,607	114,468	6.2	1,432,183	92,980	6.5	1,160,666	97,742	8.4
Rhode Island.	281,959	27,525	9.8	220,461	24,793	11.2	173,751	21,921	12.6
Connecticut.	609,830	32,194	5.3	497,303	28,424	5.7	425,896	29,616	7.0
New York.	4,822,392	266,911	5.5	3,981,428	209,600	5.3	3,378,959	239,271	7.1
New Jersey.	1,143,123	74,321	6.5	865,591	53,249	6.2	680,687	54,687	8.0
Pennsylvania.	4,063,134	275,353	6.8	3,203,215	228,014	7.1	2,597,809	222,356	8.6
South Atlantic Division:									
Delaware.	131,967	18,878	14.3	110,856	19,414	17.5	92,586	23,100	25.0
Maryland.	798,605	125,376	15.7	695,364	134,448	19.3	575,439	135,499	23.6
District of Columbia.	188,567	24,884	13.2	136,907	25,778	18.8	100,453	23,719	28.6
Virginia.	1,211,934	365,736	30.2	1,059,034	430,352	40.6	890,056	445,893	50.1
West Virginia.	549,538	79,180	14.4	428,587	85,376	19.9	308,424	81,490	26.4
North Carolina.	1,147,446	409,703	35.7	959,951	463,975	48.3	769,629	397,690	51.7
South Carolina.	802,406	360,705	45.0	667,456	369,848	55.4	503,763	290,797	57.6
Georgia.	1,302,298	518,706	39.8	1,043,840	520,416	49.9	835,929	468,593	56.1
Florida.	283,250	78,720	27.8	184,650	80,183	43.4	131,119	71,803	54.8
South Central Division:									
Kentucky.	1,360,031	294,581	21.6	1,163,498	348,392	29.9	930,136	332,176	35.7
Tennessee.	1,276,631	340,140	26.6	1,062,130	410,722	38.7	890,872	364,697	40.9
Alabama.	1,069,545	438,535	41.0	851,780	433,447	50.9	706,802	383,012	54.2
Mississippi.	902,028	360,613	40.0	753,693	373,201	49.5	581,206	313,310	53.9
Louisiana.	794,683	364,184	45.8	649,070	318,380	49.1	526,392	276,158	52.5
Texas.	1,564,755	308,873	19.7	1,064,196	316,432	29.7	571,075	221,703	38.8
Arkansas.	787,113	209,745	26.6	531,876	262,015	38.0	341,737	133,339	39.0
Oklahoma.	44,701	2,400	5.4						
North Central Division:									
Ohio.	2,853,659	149,843	5.2	2,399,367	131,847	5.5	1,953,674	173,172	8.9
Indiana.	1,674,028	105,829	6.3	1,468,095	110,761	7.5	1,197,936	127,124	10.6
Illinois.	2,907,671	152,634	5.2	2,269,315	145,397	6.4	1,809,606	133,584	7.4
Michigan.	1,619,035	95,914	5.9	1,236,686	63,723	5.2	873,763	53,127	6.1
Wisconsin.	1,258,390	84,745	6.7	965,712	55,558	5.8	751,704	55,441	7.4
Minnesota.	962,350	58,057	6.0	550,977	34,546	6.2	305,568	24,413	8.0
Iowa.	1,441,308	52,061	3.6	1,181,641	46,609	3.9	837,959	45,671	5.5
Missouri.	1,995,638	181,368	9.1	1,557,631	208,754	13.4	1,205,568	222,411	18.5
North Dakota.	129,452	7,743	6.0	99,849	4,821	4.8	10,640	1,563	14.7
South Dakota.	236,208	9,974	4.2						
Nebraska.	771,659	24,021	3.1	318,271	11,528	3.6	88,265	4,861	5.5
Kansas.	1,055,215	42,079	4.0	704,297	39,476	5.6	258,051	24,550	9.5
Western Division:									
Montana.	107,811	5,884	5.5	31,989	1,707	5.3	18,170	918	5.1
Wyoming.	47,755	1,630	3.4	16,479	556	3.4	8,059	602	7.5
Colorado.	327,896	17,180	5.2	158,220	10,474	6.6	30,949	6,823	22.5
New Mexico.	112,541	50,070	44.5	87,966	57,156	65.0	68,464	52,220	78.6
Arizona.	46,076	10,785	23.4	32,922	5,842	17.7	8,237	2,753	32.4
Utah.	147,227	8,232	5.6	97,194	8,826	9.1	56,515	7,363	13.0
Nevada.	38,225	4,897	12.8	50,666	4,069	8.0	36,635	872	2.4
Idaho.	62,721	3,225	5.1	25,005	1,778	7.1	13,189	3,388	25.7
Washington.	275,639	11,778	4.3	55,720	3,889	7.0	17,334	1,307	7.5
Oregon.	244,374	10,103	4.1	130,565	7,423	5.7	64,685	4,427	6.8
California.	989,896	75,902	7.7	681,662	53,480	7.8	430,444	31,716	7.4



TABLE 2.—Male population 10 years of age and over.

States and Territories.	1890.			1880.		
	Total.	Illiterates.		Total.	Illiterates.	
		Number.	Per cent.		Number.	Per cent.
United States.....	24,352,659	3,068,222	12.4	18,735,980	2,966,421	15.8
North Atlantic Division.....	6,904,566	407,186	5.9	5,527,160	299,431	5.4
South Atlantic Division.....	3,178,769	926,096	29.1	2,588,035	1,003,565	38.8
South Central Division.....	3,977,614	1,098,755	27.6	3,060,756	1,160,624	37.8
North Central Division.....	8,828,083	457,793	5.2	6,684,165	415,572	6.2
Western Division.....	1,463,627	118,392	8.1	866,924	87,229	10.1
North Atlantic Division:						
Maine.....	271,787	15,932	5.9	258,587	11,676	4.5
New Hampshire.....	153,923	11,643	7.5	139,807	7,077	5.1
Vermont.....	137,899	10,230	7.4	132,036	8,500	6.4
Massachusetts.....	887,063	47,348	5.3	681,786	36,262	5.3
Rhode Island.....	135,955	12,240	9.0	104,986	10,237	9.8
Connecticut.....	300,675	15,233	5.1	242,392	12,039	5.0
New York.....	2,385,622	124,443	5.2	1,950,059	95,551	4.9
New Jersey.....	568,585	35,413	6.2	426,451	23,857	5.6
Pennsylvania.....	2,061,052	134,704	6.5	1,591,056	94,232	5.9
South Atlantic Division:						
Delaware.....	67,309	9,294	13.8	56,003	9,394	16.8
Maryland.....	392,485	59,526	15.2	341,621	63,504	18.6
District of Columbia.....	88,703	9,821	11.1	63,429	10,048	15.8
Virginia.....	598,677	177,043	29.6	516,395	207,562	40.2
West Virginia.....	281,576	37,579	13.3	217,650	40,280	18.5
North Carolina.....	559,764	184,506	33.0	465,268	213,196	45.8
South Carolina.....	395,466	167,120	42.3	324,364	173,807	53.6
Georgia.....	647,922	244,944	37.8	509,830	247,339	48.5
Florida.....	146,867	36,283	24.7	93,475	38,435	41.1
South Central Division:						
Kentucky.....	689,572	141,999	20.6	586,424	169,029	28.8
Tennessee.....	640,677	155,869	24.2	524,559	191,641	36.5
Alabama.....	531,941	206,362	38.8	414,095	205,243	49.6
Mississippi.....	451,788	170,761	37.8	375,561	180,526	48.1
Louisiana.....	594,815	172,847	43.8	322,004	154,535	48.0
Texas.....	839,783	151,852	18.3	568,928	161,047	28.3
Arkansas.....	412,227	97,779	23.7	278,185	98,603	35.4
Oklahoma.....	25,811	1,286	5.0			
North Central Division:						
Ohio.....	1,442,430	63,924	4.8	1,209,435	61,754	5.1
Indiana.....	855,368	49,505	5.8	752,405	52,033	6.9
Illinois.....	1,507,159	70,548	4.7	1,178,131	69,940	5.9
Michigan.....	851,163	51,522	6.1	659,101	35,211	5.3
Wisconsin.....	657,968	39,517	6.0	503,434	26,381	5.2
Minnesota.....	523,342	25,993	5.0	307,449	16,129	5.2
Iowa.....	755,134	24,125	3.2	623,675	22,519	3.6
Missouri.....	1,037,994	86,530	8.3	816,962	103,172	12.6
North Dakota.....	74,442	3,650	4.9			
South Dakota.....	133,252	4,816	3.6	64,343	2,519	3.9
Nebraska.....	426,815	11,753	2.8	181,022	5,927	3.3
Kansas.....	563,016	19,910	3.5	388,148	19,987	5.1
Western Division:						
Montana.....	75,596	4,330	5.7	24,553	1,125	4.6
Wyoming.....	32,675	1,070	3.3	11,950	336	2.8
Colorado.....	202,719	9,808	4.8	110,896	5,345	4.8
New Mexico.....	61,585	20,969	33.9	48,266	26,103	54.1
Arizona.....	29,736	6,027	20.3	24,267	3,511	14.5
Utah.....	79,747	3,778	4.7	50,589	4,150	8.2
Nevada.....	35,370	3,127	12.3	36,211	2,760	7.6
Idaho.....	40,276	2,336	5.8	17,910	1,392	7.8
Washington.....	179,965	7,639	4.2	36,085	2,360	6.5
Oregon.....	146,406	6,634	4.5	81,031	5,154	6.4
California.....	589,252	52,674	8.9	425,170	34,987	8.2

TABLE 3.—Female population 10 years of age and over.

States and Territories.	1890.			1880.		
	Total.	Illiterates.		Total.	Illiterates.	
		Number.	Per cent.		Number.	Per cent.
United States.....	23,060,900	3,316,480	14.4	18,025,627	3,273,497	18.2
North Atlantic Division.....	6,983,811	452,803	6.5	5,742,930	399,938	7.0
South Atlantic Division.....	3,237,152	1,055,792	32.6	2,698,610	1,126,265	41.7
South Central Division.....	3,821,873	1,220,116	31.9	3,006,487	1,241,925	41.3
North Central Division.....	8,081,530	506,475	6.3	6,076,736	437,448	7.2
Western Division.....	936,534	81,294	8.7	500,864	67,921	13.6
North Atlantic Division:						
Maine.....	269,875	13,655	5.1	261,082	10,494	4.0
New Hampshire.....	159,569	9,833	6.2	146,381	7,225	4.9
Vermont.....	133,274	7,924	5.9	132,016	7,337	5.6
Massachusetts.....	952,544	67,120	7.0	750,397	56,718	7.6
Rhode Island.....	146,004	15,285	10.5	115,475	14,556	12.6
Connecticut.....	309,155	16,961	5.5	254,911	16,385	6.4
New York.....	2,436,770	142,468	5.8	2,031,369	124,049	6.1
New Jersey.....	574,538	38,908	6.8	439,140	29,392	6.7
Pennsylvania.....	2,002,082	140,649	7.0	1,612,159	133,782	8.3
South Atlantic Division:						
Delaware.....	64,653	9,604	14.9	54,853	10,020	18.3
Maryland.....	406,120	65,850	16.2	353,743	70,984	20.1
District of Columbia.....	99,864	15,063	15.1	73,478	15,730	21.4
Virginia.....	613,257	188,693	30.8	542,639	222,790	41.1
West Virginia.....	267,962	41,601	15.5	210,937	45,096	21.4
North Carolina.....	587,682	225,197	38.3	494,683	250,779	50.7
South Carolina.....	406,940	193,585	47.6	343,092	196,041	57.1
Georgia.....	654,286	273,762	41.8	534,010	273,077	51.1
Florida.....	136,383	42,437	31.1	91,175	41,748	45.8
South Central Division:						
Kentucky.....	670,459	152,382	22.7	577,074	179,563	31.1
Tennessee.....	635,954	184,271	29.0	537,571	219,081	40.8
Alabama.....	537,604	232,173	43.2	437,685	228,204	52.1
Mississippi.....	450,240	189,852	42.2	378,132	192,635	50.9
Louisiana.....	399,863	191,337	47.9	327,066	163,845	50.1
Texas.....	733,972	157,021	21.4	495,268	155,385	31.4
Arkansas.....	374,886	111,966	29.9	253,691	103,412	40.8
Oklahoma.....	18,890	1,114	5.9			
North Central Division:						
Ohio.....	1,416,229	79,919	5.6	1,189,932	70,093	5.9
Indiana.....	818,060	56,324	6.9	715,690	58,728	8.2
Illinois.....	1,400,512	82,086	5.9	1,091,184	75,457	6.9
Michigan.....	767,872	44,392	5.8	577,585	28,512	4.9
Wisconsin.....	600,422	45,228	7.5	462,278	29,177	6.3
Minnesota.....	439,008	32,064	7.3	252,528	18,417	7.3
Iowa.....	686,174	27,936	4.1	557,966	24,690	4.3
Missouri.....	957,644	94,838	9.9	740,669	105,585	14.3
North Dakota.....	55,010	4,093	7.4			
South Dakota.....	102,956	5,158	5.0	25,506	2,302	6.5
Nebraska.....	344,844	12,268	3.6	137,249	5,601	4.1
Kansas.....	492,199	22,169	4.5	316,149	19,489	6.2
Western Division:						
Montana.....	32,215	1,554	4.8	7,431	582	7.8
Wyoming.....	15,080	560	3.7	4,529	220	4.9
Colorado.....	125,177	7,372	5.9	47,324	5,129	10.8
New Mexico.....	50,656	29,101	57.4	39,700	31,053	78.2
Arizona.....	16,340	4,753	29.1	8,655	2,331	26.9
Utah.....	67,480	4,454	6.6	46,614	4,670	10.0
Nevada.....	12,855	1,770	13.8	14,455	1,309	9.1
Idaho.....	22,445	889	4.0	7,095	386	5.4
Washington.....	95,674	4,139	4.3	19,635	1,529	7.8
Oregon.....	97,968	3,469	3.5	49,534	2,269	4.6
California.....	400,644	23,228	5.8	255,892	18,443	7.2

TABLE 4.—Native white population 10 years of age and over.

States and Territories.	1890.			1880.			1870.		
	Total.	Illiterates.		Total.	Illiterates.		Total.	Illiterates.	
		Number.	Per cent.		Number.	Per cent.		Number.	Per cent.
United States.	33, 144, 187	2, 065, 003	6.2	25, 785, 789	2, 255, 400	8.7	19, 347, 967.	2, 081, 233	10.8
North Atlantic Division	9, 937, 918	229, 897	2.3	8, 351, 065	234, 576	2.8	6, 815, 773	218, 962	3.2
South Atlantic Division	3, 912, 815	571, 899	14.6	3, 144, 714	630, 062	20.0	2, 490, 168	603, 310	24.2
South Central Division	5, 039, 641	754, 935	15.0	3, 806, 063	836, 489	22.0	2, 788, 841	668, 972	24.0
North Central Division	12, 652, 374	436, 328	3.4	9, 616, 617	482, 103	5.0	6, 824, 774	521, 381	7.6
Western Division.	1, 691, 439	71, 944	4.5	837, 330	72, 230	8.6	428, 411	68, 608	16.0
North Atlantic Division:									
Maine	463, 835	11, 443	2.5	463, 158	8, 775	1.9	444, 226	7, 808	1.8
New Hampshire.	247, 824	3, 679	1.5	242, 811	2, 710	1.1	230, 885	1, 897	.8
Vermont	228, 689	7, 211	3.2	224, 361	5, 354	2.4	211, 781	3, 780	1.8
Massachusetts	1, 193, 469	9, 727	.8	990, 160	6, 933	.7	802, 832	5, 750	.7
Rhode Island.	175, 065	4, 087	2.3	144, 596	4, 261	2.9	115, 191	3, 552	3.1
Connecticut.	422, 986	4, 300	1.0	361, 733	3, 728	1.0	306, 440	3, 975	1.3
New York	3, 248, 761	57, 362	1.8	2, 742, 847	59, 516	2.2	2, 220, 640	59, 870	2.7
New Jersey	788, 401	21, 351	2.7	618, 941	20, 093	3.2	471, 823	21, 425	4.5
Pennsylvania	3, 165, 888	110, 737	3.5	2, 562, 458	123, 266	4.8	2, 011, 955	110, 905	5.5
South Atlantic Division:									
Delaware	97, 732	6, 068	6.2	82, 318	6, 630	8.1	66, 971	8, 811	13.2
Maryland	516, 290	32, 105	5.9	462, 697	36, 027	7.8	365, 155	38, 201	10.5
District of Columbia	109, 262	1, 803	1.7	75, 025	1, 950	2.6	50, 532	2, 658	5.3
Virginia	738, 476	103, 265	14.0	616, 314	113, 915	18.5	512, 819	122, 269	23.8
West Virginia	506, 434	65, 420	12.9	392, 242	72, 826	18.6	278, 599	68, 392	24.5
North Carolina.	751, 302	173, 545	23.1	605, 244	191, 913	31.7	494, 133	106, 280	33.7
South Carolina.	326, 125	59, 063	18.1	265, 356	59, 415	22.4	205, 802	54, 514	26.5
Georgia	689, 969	113, 945	16.5	553, 769	128, 362	23.2	451, 703	123, 849	27.4
Florida	147, 225	16, 685	11.3	91, 749	19, 024	20.7	63, 454	18, 336	28.9
South Central Division:									
Kentucky	1, 104, 044	178, 159	16.1	914, 311	208, 796	22.8	712, 158	193, 846	27.2
Tennessee	947, 445	170, 318	18.0	774, 411	214, 694	27.8	646, 053	176, 985	27.4
Alabama	576, 154	106, 235	18.4	443, 327	111, 040	25.0	368, 304	91, 189	24.8
Mississippi	377, 466	44, 987	11.9	319, 385	52, 910	16.6	265, 292	47, 217	17.8
Louisiana	354, 293	72, 013	20.3	268, 600	53, 261	19.8	204, 130	43, 406	21.3
Texas	1, 084, 587	89, 829	8.3	701, 969	97, 498	13.9	340, 596	52, 526	15.4
Arkansas	555, 873	92, 052	16.6	384, 060	97, 990	25.5	251, 708	63, 803	25.3
Oklahoma	39, 779	1, 342	3.4						
North Central Division:									
Ohio	2, 343, 936	82, 673	3.5	1, 952, 858	83, 183	4.3	1, 545, 177	113, 313	7.3
Indiana	1, 495, 302	78, 638	5.3	1, 297, 159	87, 786	6.8	1, 042, 562	104, 822	10.1
Illinois	2, 051, 323	64, 380	3.1	1, 666, 214	88, 519	5.3	1, 288, 434	80, 635	6.3
Michigan	1, 086, 481	27, 016	2.5	854, 925	19, 981	2.3	691, 555	18, 069	3.0
Wisconsin	752, 678	15, 613	2.1	566, 745	11, 494	2.0	395, 617	13, 517	3.4
Minnesota	508, 615	7, 112	1.4	300, 747	5, 671	1.9	148, 542	5, 086	3.4
Iowa	1, 118, 475	20, 649	1.8	918, 723	23, 660	2.6	635, 150	23, 453	3.7
Missouri	1, 651, 622	112, 938	6.8	1, 244, 738	137, 949	11.1	906, 579	146, 179	16.1
North Dakota.	52, 933	929	1.8						
South Dakota.	148, 819	1, 811	1.2	51, 229	933	1.8	5, 095	109	2.1
Nebraska	568, 041	7, 412	1.3	224, 899	5, 102	2.3	57, 736	3, 321	5.8
Kansas	874, 149	17, 157	2.0	563, 380	17, 825	3.1	198, 327	12, 877	6.5
Western Division:									
Montana	64, 089	1, 020	1.6	19, 628	272	1.4	10, 016	248	2.5
Wyoming	32, 546	427	1.3	10, 458	177	1.7	4, 406	179	4.1
Colorado	241, 084	9, 235	3.8	117, 132	8, 373	7.1	23, 359	6, 309	27.0
New Mexico	93, 625	40, 065	42.8	72, 219	46, 329	64.2	59, 716	48, 231	80.8
Arizona	26, 139	2, 056	7.9	15, 260	1, 225	8.1	2, 497	243	9.7
Utah	94, 925	2, 219	2.3	53, 944	3, 183	5.9	26, 176	3, 283	12.5
Nevada	20, 456	173	.8	22, 660	240	1.1	17, 839	77	.4
Idaho	45, 339	867	1.9	15, 011	443	3.0	5, 300	108	2.0
Washington	184, 860	2, 467	1.3	37, 278	895	2.4	11, 179	320	2.9
Oregon	186, 599	3, 302	1.8	99, 028	3, 433	3.5	52, 741	2, 795	5.3
California	611, 777	10, 113	1.7	374, 772	7, 660	2.0	215, 182	6, 815	3.2



TABLE 5.—*Foreign-born white population 10 years of age and over.*

States and Territories.	1890.			1880.			1870.		
	Total.	Illiterates.		Total.	Illiterates.		Total.	Illiterates.	
		Number.	Per cent.		Number.	Per cent.		Number.	Per cent.
United States.....	8,786,887	1,147,571	13.1	6,374,611	763,620	12.0	5,369,903	770,678	14.4
North Atlantic Division.....	3,720,601	580,194	15.6	2,735,039	420,241	15.4	2,470,039	453,115	18.3
South Atlantic Division.....	196,454	24,053	12.2	163,206	17,023	10.1	165,165	20,076	12.2
South Central Division.....	307,458	62,096	20.2	262,727	40,855	15.6	225,932	36,658	16.2
North Central Division.....	3,908,466	413,515	10.6	2,819,948	249,701	8.9	2,263,277	229,252	10.1
Western Division.....	653,908	67,713	10.4	388,691	35,800	9.2	245,490	31,577	12.9
North Atlantic Division:									
Maine.....	73,322	17,665	24.1	54,853	12,938	23.7	47,902	11,066	23.1
New Hampshire.....	67,089	17,661	26.3	42,783	11,498	26.9	29,019	7,934	27.3
Vermont.....	41,696	10,775	25.8	38,884	10,327	26.6	46,212	13,804	29.9
Massachusetts.....	626,543	101,715	16.2	426,607	83,725	19.6	346,158	89,828	25.9
Rhode Island.....	100,564	22,268	22.1	70,562	19,283	27.3	54,288	17,477	32.2
Connecticut.....	176,360	26,236	14.9	126,047	23,035	18.3	111,364	23,938	21.5
New York.....	1,511,521	193,136	13.1	1,184,756	148,659	12.5	1,115,558	168,554	15.1
New Jersey.....	315,385	41,612	13.3	216,444	23,956	11.1	185,149	24,961	13.5
Pennsylvania.....	808,121	143,926	17.8	574,103	86,775	15.1	534,389	95,553	17.9
South Atlantic Division:									
Delaware.....	12,627	2,118	16.8	9,293	1,716	18.5	9,045	2,469	27.3
Maryland.....	91,269	12,548	13.8	81,389	8,289	10.2	82,576	8,591	10.4
District of Columbia.....	18,264	1,692	9.3	16,847	2,038	12.1	16,088	2,218	13.8
Virginia.....	17,776	1,793	10.1	14,270	777	5.4	13,613	1,269	9.3
West Virginia.....	18,367	2,768	15.1	17,899	2,411	13.5	16,920	3,101	18.3
North Carolina.....	3,555	177	5.0	3,562	119	3.3	2,999	117	3.9
South Carolina.....	6,049	380	6.3	7,350	362	4.9	7,992	653	8.2
Georgia.....	11,616	746	6.4	10,208	572	5.6	11,015	1,090	9.9
Florida.....	16,991	1,831	10.8	7,388	739	10.0	4,917	568	11.6
South Central Division:									
Kentucky.....	58,298	5,692	9.8	58,964	5,701	9.7	61,495	7,231	11.8
Tennessee.....	19,386	1,851	9.5	16,333	1,293	7.5	18,737	1,742	9.3
Alabama.....	13,961	1,100	7.9	9,395	727	7.7	9,663	870	9.0
Mississippi.....	7,633	768	10.1	8,911	538	6.0	10,840	811	7.5
Louisiana.....	47,748	8,926	18.7	52,317	5,690	10.9	59,903	7,343	12.3
Texas.....	144,014	42,560	29.6	106,962	26,414	24.7	60,514	18,369	30.4
Arkansas.....	13,786	1,038	7.5	9,845	552	5.6	4,780	292	6.1
Oklahoma.....	2,632	161	6.1	.....	.....	.....	.....	.....	.....
North Central Division:									
Ohio.....	445,543	49,571	11.1	386,670	32,308	8.4	361,317	39,670	10.8
Indiana.....	143,032	15,696	11.0	141,796	12,612	8.9	137,230	13,939	10.2
Illinois.....	810,348	75,839	9.4	568,264	49,907	7.7	499,741	42,989	8.6
Michigan.....	515,993	64,060	12.4	364,981	38,951	10.7	259,968	30,580	11.8
Wisconsin.....	500,916	67,371	13.4	394,688	42,739	10.8	353,564	41,328	11.7
Minnesota.....	449,047	49,854	11.1	256,436	27,835	10.9	155,876	18,855	12.1
Iowa.....	314,374	29,179	9.3	255,340	20,677	8.1	198,548	20,692	10.4
Missouri.....	229,856	20,868	9.1	208,500	14,561	7.0	215,596	15,564	7.2
North Dakota.....	76,065	6,599	8.7	.....	.....	.....	.....	.....	.....
South Dakota.....	86,160	7,753	9.0	47,119	3,224	6.8	4,671	805	17.0
Nebraska.....	194,103	14,163	7.3	91,413	5,824	6.4	29,826	1,309	4.4
Kansas.....	143,629	12,562	8.8	104,741	7,063	6.7	46,940	4,101	8.7
Western Division:									
Montana.....	39,175	3,212	8.2	9,358	359	3.8	5,909	395	6.7
Wyoming.....	13,890	981	7.1	4,782	197	4.1	3,303	302	9.1
Colorado.....	79,975	6,239	7.8	38,324	1,533	4.0	6,460	255	3.9
New Mexico.....	10,478	3,200	30.5	7,548	3,268	43.3	5,508	2,909	52.8
Arizona.....	16,343	6,900	42.2	13,434	3,599	26.8	5,673	2,466	43.8
Utah.....	50,512	5,188	10.3	41,932	4,954	11.8	29,652	3,814	12.9
Nevada.....	11,833	1,183	10.0	19,935	1,675	8.4	15,336	576	3.8
Idaho.....	15,107	1,252	8.3	6,470	341	5.3	3,539	378	10.7
Washington.....	82,887	5,794	7.0	11,991	534	4.5	4,694	503	10.7
Oregon.....	46,326	3,644	7.9	20,454	910	4.4	8,105	616	7.6
California.....	287,382	30,120	10.5	214,463	18,430	8.6	157,311	19,343	12.3

TABLE 6.—*White population 10 years of age and over.*

States and Territories.	1893.			1880.			1870.		
	Total.	Illiterates.		Total.	Illiterates.		Total.	Illiterates.	
		Number.	Per cent.		Number.	Per cent.		Number.	Per cent.
United States	41,931,674	3,212,574	7.7	32,160,400	3,019,080	9.4	24,717,870	2,851,911	11.5
North Atlantic Division	13,658,519	810,031	5.9	11,086,104	654,817	5.9	9,285,812	672,077	7.2
South Atlantic Division	4,109,269	505,952	14.5	3,312,920	647,085	19.5	2,655,333	623,386	23.5
South Central Division	5,347,099	817,031	15.3	4,068,790	877,344	21.6	3,014,773	705,630	23.4
North Central Division	16,560,840	849,843	5.1	12,466,565	731,804	5.9	9,088,051	750,633	8.3
Western Division	2,255,347	139,657	6.2	1,226,021	108,030	8.8	673,901	100,185	14.9
North Atlantic Division:									
Maine	540,157	29,108	5.4	518,011	21,758	4.2	492,128	18,874	3.8
New Hampshire	314,913	21,340	6.8	285,594	14,208	5.0	259,804	9,831	3.8
Vermont	270,385	17,986	6.7	263,245	15,681	6.0	257,993	17,584	6.8
Massachusetts	1,820,012	111,442	6.1	1,416,767	90,658	6.4	1,148,990	95,578	8.3
Rhode Island	275,629	26,355	9.6	215,158	23,544	10.9	169,479	21,029	12.4
Connecticut	599,346	30,536	5.1	487,780	26,763	5.5	417,804	27,913	6.7
New York	4,760,282	255,498	5.4	3,927,603	208,175	5.3	3,336,198	228,424	6.8
New Jersey	1,103,786	63,163	5.7	835,385	44,049	5.3	656,972	46,386	7.1
Pennsylvania	3,974,009	254,663	6.4	3,136,561	209,981	6.7	2,546,344	206,458	8.1
South Atlantic Division:									
Delaware	110,359	8,126	7.4	91,611	8,346	9.1	76,016	11,280	14.8
Maryland	937,499	44,653	7.0	544,086	44,316	8.1	447,731	46,792	10.4
District of Columbia	127,526	3,495	2.7	91,872	3,988	4.3	66,620	4,876	7.3
Virginia	756,252	105,058	13.9	630,584	114,602	18.2	527,432	123,538	23.4
West Virginia	524,801	68,188	13.0	410,141	75,237	18.3	295,519	71,493	24.2
North Carolina	754,857	173,722	23.0	608,806	192,032	31.5	497,132	166,397	33.5
South Carolina	332,174	59,443	17.9	272,706	59,777	21.9	213,794	55,167	25.8
Georgia	701,585	114,691	16.3	563,977	128,934	22.9	462,718	124,939	27.0
Florida	164,216	18,516	11.3	99,137	19,763	19.9	68,371	18,904	27.6
South Central Division:									
Kentucky	1,162,342	183,851	15.8	973,275	214,497	22.0	773,653	201,077	26.0
Tennessee	966,831	172,169	17.8	790,744	216,227	27.3	665,390	178,727	26.9
Alabama	590,115	107,335	18.2	452,722	111,767	24.7	377,967	92,059	24.4
Mississippi	385,099	45,755	11.9	328,296	53,448	16.3	276,132	48,028	17.4
Louisiana	402,041	80,939	20.1	320,917	58,951	18.4	264,033	50,749	19.2
Texas	1,228,601	132,389	10.8	803,931	123,912	15.3	401,110	70,895	17.7
Arkansas	569,659	93,090	16.3	393,905	98,542	25.0	256,488	64,695	25.0
Oklahoma	42,411	1,503	3.5						
North Central Division:									
Ohio	2,789,479	132,244	4.7	2,339,528	115,491	4.9	1,806,494	152,383	8.0
Indiana	1,638,334	94,334	5.8	1,438,955	100,398	7.0	1,179,792	118,761	10.1
Illinois	2,861,071	140,219	4.9	2,234,478	132,426	5.9	1,788,175	123,624	6.9
Michigan	1,602,474	91,076	5.7	1,219,906	58,932	4.8	861,523	48,649	5.6
Wisconsin	1,253,594	82,984	6.6	961,433	54,233	5.6	749,181	54,845	7.3
Minnesota	957,662	56,966	5.9	557,183	33,506	6.0	304,418	23,911	7.9
Iowa	1,432,849	49,828	3.5	1,174,063	44,337	3.8	833,698	44,145	5.3
Missouri	1,881,478	133,806	7.1	1,453,238	152,510	10.5	1,122,175	161,763	14.4
North Dakota	128,996	7,528	5.8	98,348	4,157	4.2	9,766	914	9.4
South Dakota	234,979	9,564	4.1						
Nebraska	762,144	21,578	2.8	316,312	10,926	3.5	87,562	4,630	5.3
Kansas	1,017,178	29,719	2.9	673,121	24,888	3.7	245,267	16,978	6.9
Western Division:									
Montana	103,264	4,232	4.1	28,986	631	2.2	15,925	643	4.0
Wyoming	46,436	1,408	3.0	15,240	374	2.5	7,709	481	6.2
Colorado	321,050	15,474	4.8	155,456	9,906	6.4	29,819	6,564	22.0
New Mexico	104,103	43,265	41.6	79,767	49,547	62.2	65,224	51,140	78.4
Arizona	42,482	8,956	21.1	28,634	4,824	16.8	8,170	2,729	33.3
Utah	145,437	7,407	5.1	95,876	8,137	8.5	55,828	7,097	12.7
Nevada	32,280	1,356	4.2	42,565	1,915	4.5	33,175	653	2.0
Idaho	60,446	2,119	3.5	21,481	784	3.6	8,839	486	5.5
Washington	267,747	8,261	3.1	49,269	1,429	2.9	15,873	823	5.2
Oregon	232,925	6,946	3.0	119,482	4,343	3.6	60,846	3,411	5.6
California	899,159	40,233	4.5	589,235	26,090	4.4	372,493	26,158	7.0

TABLE 7.—*Colored population 10 years of age and over.*

States and Territories.	1890.			1880.			1870.		
	Total.	Illiterates.		Total.	Illiterates.		Total.	Illiterates.	
		Number.	Per cent.		Number.	Per cent.		Number.	Per cent.
United States .	5,482,485	3,112,128	56.8	4,601,207	3,220,878	70.0	3,511,075	2,806,233	79.9
North Atlantic Division .	226,858	49,898	21.7	183,986	44,552	24.2	144,980	40,200	27.7
South Atlantic Division .	2,306,652	1,385,936	60.1	1,973,725	1,482,745	75.1	1,552,065	1,319,780	85.0
South Central Division .	2,452,388	1,561,840	61.2	2,007,453	1,525,245	76.0	1,533,447	1,318,765	86.0
North Central Division .	348,773	114,425	32.8	294,276	121,216	41.2	204,383	115,284	56.4
Western Division .	144,814	60,029	41.5	141,767	47,120	33.2	76,200	12,204	16.0
North Atlantic Division:									
Maine .	1,505	479	31.8	1,658	412	24.8	1,719	178	10.3
New Hampshire .	584	136	23.3	594	94	15.8	522	95	18.2
Vermont .	788	168	21.3	807	156	19.3	758	122	16.1
Massachusetts .	19,595	3,026	15.4	15,416	2,322	15.1	11,676	2,164	18.5
Rhode Island .	6,330	1,170	18.5	5,303	1,249	23.6	4,272	892	20.9
Connecticut .	10,484	1,658	15.8	9,523	1,661	17.4	8,092	1,703	21.0
New York .	62,110	11,413	18.4	53,825	11,425	21.2	42,761	10,847	25.4
New Jersey .	39,337	11,158	28.4	30,206	9,200	30.5	23,715	8,361	35.4
Pennsylvania .	89,125	20,690	23.2	66,654	18,033	27.1	51,465	15,898	30.9
South Atlantic Division:									
Delaware .	21,608	10,692	49.5	19,245	11,068	57.5	16,570	11,820	71.3
Maryland .	161,106	80,723	50.1	151,278	90,172	59.6	127,708	83,767	65.5
District of Columbia .	61,041	21,389	35.0	45,036	21,790	48.4	33,833	23,843	70.5
Virginia .	455,682	260,678	57.2	428,450	315,660	73.2	362,624	322,355	88.9
West Virginia .	24,737	10,992	44.4	18,436	10,139	55.0	12,005	9,697	77.4
North Carolina .	392,589	235,981	60.1	351,145	271,943	77.4	272,497	231,293	84.8
South Carolina .	470,232	301,262	64.1	394,750	310,071	78.5	289,969	235,212	81.1
Georgia .	609,623	404,015	67.3	479,863	391,482	81.6	373,211	343,054	92.1
Florida .	119,034	60,204	50.6	85,513	60,420	70.7	62,748	52,899	84.1
South Central Division:									
Kentucky .	197,689	110,530	55.9	190,223	133,895	70.4	156,483	131,099	83.8
Tennessee .	309,800	167,971	54.2	271,386	194,465	71.7	225,482	185,970	82.4
Alabama .	479,430	331,260	69.1	399,058	321,680	80.6	328,835	290,953	88.1
Mississippi .	516,929	314,858	60.9	425,397	319,753	75.2	305,074	265,282	87.0
Louisiana .	392,612	283,245	72.1	328,153	259,429	79.1	262,359	225,409	85.9
Texas .	336,154	176,484	52.5	255,265	192,520	75.4	169,965	150,808	88.7
Arkansas .	217,454	116,655	53.6	137,971	103,473	75.0	85,249	69,244	81.2
Oklahoma .	2,290	897	39.2						
North Central Division:									
Ohio .	69,180	17,599	25.4	59,839	16,356	27.3	46,880	20,789	44.3
Indiana .	35,694	11,495	32.2	29,140	10,363	35.6	18,144	8,363	46.1
Illinois .	46,000	12,415	27.0	34,837	12,971	37.2	21,431	9,900	46.5
Michigan .	16,561	4,838	29.2	16,780	4,791	28.5	12,240	4,478	36.6
Wisconsin .	4,796	1,761	36.7	4,279	1,325	31.0	2,523	596	23.6
Minnesota .	4,688	1,091	23.3	2,794	1,040	37.2	1,150	472	41.0
Iowa .	8,459	2,233	26.4	7,578	2,272	30.0	4,261	1,526	35.8
Missouri .	114,160	47,562	41.7	104,393	56,244	53.9	83,393	60,648	72.7
North Dakota .	454	215	47.4						
South Dakota .	1,229	410	33.4	1,501	664	44.2	874	619	74.3
Nebraska .	9,515	2,446	25.7	1,959	602	30.7	703	231	32.9
Kansas .	38,637	12,360	32.5	31,176	14,588	46.8	12,784	7,572	59.1
Western Division:									
Montana .	4,547	1,652	36.3	3,003	1,076	35.8	2,245	275	12.2
Wyoming .	1,319	222	16.8	1,239	182	14.7	350	121	34.6
Colorado .	6,837	1,706	25.0	2,764	568	20.5	590	259	48.9
New Mexico .	8,438	6,805	80.6	8,199	7,559	92.2	1,240	1,080	87.1
Arizona .	3,594	1,829	50.9	4,288	1,013	23.7	67	24	35.8
Utah .	1,790	825	46.1	1,318	680	52.3	687	266	38.7
Nevada .	5,936	3,541	59.7	8,071	2,154	26.7	3,480	219	6.3
Idaho .	2,275	1,106	48.6	3,524	934	28.2	4,350	2,902	66.7
Washington .	7,892	3,517	44.6	6,451	2,460	38.1	1,461	484	33.1
Oregon .	11,449	3,157	27.6	11,083	3,080	27.8	3,839	1,016	26.5
California .	90,737	35,609	39.3	91,827	27,340	29.8	57,951	5,558	9.6



TABLE 8.—*The three elements of population in 1890.*

States and Territories.	Total population.	Native white.	Per cent.	Foreign-born white.	Per cent.	Colored.	Per cent.
United States.....	62, 622, 250	45, 862, 023	73. 24	9, 121, 867	14. 57	7, 638, 360	12. 19
North Atlantic Division.....	17, 401, 545	13, 247, 115	76. 13	3, 874, 866	22. 27	279, 564	1. 60
South Atlantic Division.....	8, 857, 920	5, 389, 833	60. 85	202, 316	2. 28	3, 265, 771	36. 87
South Central Division.....	10, 972, 893	7, 168, 997	65. 33	318, 579	2. 91	3, 485, 317	31. 76
North Central Division.....	22, 362, 279	17, 858, 470	79. 86	4, 053, 457	18. 13	450, 352	2. 01
Western Division.....	3, 027, 613	2, 197, 608	72. 59	672, 649	22. 22	157, 356	5. 19
North Atlantic Division:							
Maine.....	661, 086	580, 568	87. 82	78, 695	11. 90	1, 823	. 28
New Hampshire.....	376, 530	303, 644	80. 64	72, 196	19. 17	690	. 19
Vermont.....	332, 422	287, 394	86. 46	44, 024	13. 24	1, 004	. 30
Massachusetts.....	2, 238, 943	1, 561, 870	69. 76	653, 503	29. 19	23, 570	1. 05
Rhode Island.....	345, 506	231, 832	67. 10	106, 027	30. 69	7, 647	2. 21
Connecticut.....	746, 258	550, 283	73. 74	183, 155	24. 54	12, 890	1. 72
New York.....	5, 997, 853	4, 358, 260	72. 67	1, 565, 692	26. 10	73, 901	1. 23
New Jersey.....	1, 444, 932	1, 068, 596	73. 95	327, 985	22. 70	48, 352	3. 35
Pennsylvania.....	5, 258, 014	4, 304, 668	81. 87	843, 589	16. 04	109, 757	2. 09
South Atlantic Division:							
Delaware.....	168, 493	126, 970	75. 36	13, 096	7. 77	28, 427	16. 87
Maryland.....	1, 042, 390	732, 706	70. 29	93, 787	9. 00	215, 897	20. 71
District of Columbia.....	230, 392	136, 178	59. 11	18, 517	8. 04	75, 697	32. 85
Virginia.....	1, 655, 980	1, 001, 933	60. 50	18, 189	1. 10	635, 858	38. 40
West Virginia.....	762, 794	711, 225	93. 24	18, 852	2. 47	32, 717	4. 29
North Carolina.....	1, 617, 947	1, 051, 720	65. 00	3, 662	. 23	562, 565	34. 77
South Carolina.....	1, 151, 149	455, 865	39. 60	6, 143	. 53	689, 141	59. 87
Georgia.....	1, 837, 353	966, 465	52. 60	11, 892	. 65	858, 996	46. 75
Florida.....	391, 422	206, 771	52. 83	18, 178	4. 64	166, 473	42. 53
South Central Division:							
Kentucky.....	1, 858, 635	1, 531, 222	82. 38	59, 240	3. 19	268, 173	14. 43
Tennessee.....	1, 767, 518	1, 316, 738	74. 50	19, 899	1. 12	430, 881	24. 38
Alabama.....	1, 513, 017	819, 114	54. 14	14, 604	. 97	679, 299	44. 89
Mississippi.....	1, 289, 600	537, 127	41. 65	7, 724	. 60	744, 749	57. 75
Louisiana.....	1, 118, 587	509, 555	45. 55	48, 840	4. 37	560, 192	50. 08
Texas.....	2, 235, 523	1, 594, 466	71. 32	151, 469	6. 78	489, 588	21. 90
Arkansas.....	1, 128, 179	804, 658	71. 32	14, 094	1. 25	309, 427	27. 43
Oklahoma.....	61, 834	56, 117	90. 75	2, 709	4. 38	3, 008	4. 87
North Central Division:							
Ohio.....	3, 672, 316	3, 126, 252	85. 13	458, 553	12. 49	87, 511	2. 38
Indiana.....	2, 192, 404	2, 000, 733	91. 26	146, 003	6. 66	45, 668	2. 08
Illinois.....	3, 826, 351	2, 927, 497	76. 51	840, 975	21. 98	57, 879	1. 51
Michigan.....	2, 093, 888	1, 531, 283	73. 13	541, 601	25. 87	21, 005	1. 00
Wisconsin.....	1, 686, 880	1, 161, 484	68. 85	518, 989	30. 77	6, 407	. 38
Minnesota.....	1, 301, 826	829, 102	63. 69	467, 057	35. 88	5, 667	. 43
Iowa.....	1, 911, 896	1, 577, 154	82. 49	323, 932	16. 94	10, 810	. 57
Missouri.....	2, 679, 184	2, 294, 176	85. 63	234, 282	8. 74	150, 726	5. 63
North Dakota.....	182, 719	100, 775	55. 15	81, 348	44. 52	596	. 33
South Dakota.....	328, 808	236, 447	71. 91	90, 843	27. 63	1, 518	. 46
Nebraska.....	1, 058, 910	844, 644	79. 77	202, 244	19. 10	12, 022	1. 13
Kansas.....	1, 427, 096	1, 228, 923	86. 11	147, 630	10. 34	50, 543	3. 55
Western Division:							
Montana.....	132, 159	86, 941	65. 79	40, 330	30. 52	4, 888	3. 69
Wyoming.....	60, 705	44, 845	73. 87	14, 330	23. 77	1, 430	2. 36
Colorado.....	412, 198	321, 962	78. 11	82, 506	20. 02	7, 730	1. 87
New Mexico.....	153, 593	131, 859	85. 85	10, 860	7. 07	10, 874	7. 08
Arizona.....	59, 620	38, 117	63. 93	17, 463	29. 29	4, 040	6. 78
Utah.....	207, 905	153, 766	73. 96	52, 133	25. 08	2, 006	. 96
Nevada.....	45, 761	27, 190	59. 42	11, 694	25. 99	6, 667	14. 59
Idaho.....	84, 385	66, 554	78. 87	15, 464	18. 33	2, 367	2. 80
Washington.....	349, 390	254, 319	72. 79	86, 194	24. 67	8, 877	2. 54
Oregon.....	313, 767	253, 936	80. 93	47, 822	15. 24	12, 009	3. 83
California.....	1, 208, 130	818, 119	67. 72	293, 553	24. 30	96, 458	7. 98

TABLE 9.—*The three elements of population in 1880.*

States and Territories.	Total population.	Native white.	Per cent.	Foreign white.	Per cent.	Colored.	Per cent.
United States .....	50,155,783	36,843,291	73.46	6,559,679	13.08	6,752,813	13.46
North Atlantic Division.....	14,507,407	11,465,448	79.03	2,808,396	19.36	233,563	1.61
South Atlantic Division.....	7,597,197	4,483,144	59.01	170,968	2.25	2,942,085	38.74
South Central Division.....	8,919,371	5,630,217	63.12	271,098	3.04	3,018,056	33.84
North Central Division.....	17,364,111	14,049,225	80.91	2,912,198	16.77	402,688	2.32
Western Division.....	1,767,697	1,215,257	68.75	397,019	22.46	155,421	8.79
<b>North Atlantic Division:</b>							
Maine.....	648,936	588,193	90.64	58,659	9.04	2,084	.32
New Hampshire.....	346,991	299,995	86.46	46,234	13.32	762	.22
Vermont.....	332,286	290,281	87.36	40,937	12.32	1,068	.32
Massachusetts.....	1,783,085	1,321,844	74.13	441,953	24.79	19,303	1.08
Rhode Island.....	276,531	196,108	70.92	73,531	26.70	6,592	2.38
Connecticut.....	622,700	481,060	77.25	129,709	20.83	11,931	1.92
New York.....	5,082,871	3,807,317	74.90	1,208,705	23.78	66,849	1.32
New Jersey.....	1,131,116	870,697	76.98	221,320	19.57	39,699	3.45
Pennsylvania.....	4,282,891	3,609,953	84.29	587,063	13.71	85,875	2.00
<b>South Atlantic Division:</b>							
Delaware.....	146,608	110,720	75.52	9,440	6.44	26,448	18.04
Maryland.....	934,943	642,165	68.68	82,528	8.83	210,250	22.49
District of Columbia.....	177,624	101,026	56.88	16,980	9.56	59,618	33.56
Virginia.....	1,512,565	866,248	57.27	14,610	.97	631,707	41.76
West Virginia.....	618,457	574,309	92.86	18,228	2.95	25,920	4.19
North Carolina.....	1,399,750	863,550	61.69	3,692	.26	532,508	38.05
South Carolina.....	995,577	383,651	38.53	7,454	.75	604,472	60.72
Georgia.....	1,542,180	806,573	52.30	10,333	.67	725,274	47.03
Florida.....	269,493	134,902	50.06	7,703	2.86	126,888	47.08
<b>South Central Division:</b>							
Kentucky.....	1,648,090	1,317,725	79.93	59,454	3.61	271,511	16.46
Tennessee.....	1,542,359	1,122,236	72.76	16,595	1.08	403,528	26.16
Alabama.....	1,262,505	652,664	51.70	9,521	.75	600,320	47.55
Mississippi.....	1,131,597	470,403	41.57	8,935	.79	652,199	57.64
Louisiana.....	939,946	402,177	42.79	52,777	5.61	484,992	51.60
Texas.....	1,591,749	1,083,656	68.08	113,581	7.14	394,512	24.78
Arkansas.....	802,525	581,356	72.44	10,175	1.27	210,994	26.29
Oklahoma.....							
<b>North Central Division:</b>							
Ohio.....	3,198,062	2,723,582	85.16	394,338	12.33	80,142	2.51
Indiana.....	1,978,301	1,794,764	90.72	144,093	7.28	39,503	2.00
Illinois.....	3,077,871	2,448,172	79.54	582,979	18.94	46,720	1.52
Michigan.....	1,636,937	1,228,127	75.03	386,433	23.61	22,377	1.36
Wisconsin.....	1,315,497	904,300	68.74	405,318	30.81	5,879	.45
Minnesota.....	780,773	509,373	65.24	267,511	34.26	3,889	.50
Iowa.....	1,624,615	1,353,046	83.28	261,554	16.10	10,015	.62
Missouri.....	1,168,380	1,811,467	83.54	211,359	9.75	145,554	6.71
North Dakota.....	135,177	81,770	60.49	51,377	38.01	2,030	1.50
South Dakota.....	452,402	352,413	77.90	97,351	21.52	2,638	.58
Nebraska.....	996,096	842,211	84.55	109,944	11.04	43,941	4.41
Kansas.....							
<b>Western Division:</b>							
Montana.....	39,159	25,898	66.14	9,487	24.22	3,774	9.64
Wyoming.....	20,789	14,509	69.79	4,928	23.71	1,352	6.50
Colorado.....	194,327	151,978	78.21	39,148	20.15	3,201	1.64
New Mexico.....	119,565	100,773	84.28	7,948	6.65	10,844	9.07
Arizona.....	40,440	20,809	51.46	14,351	35.49	5,280	13.05
Utah.....	143,963	98,958	68.74	43,465	30.19	1,540	1.07
Nevada.....	62,266	33,350	53.56	20,206	32.45	8,710	13.99
Idaho.....	32,610	22,414	68.73	6,599	20.24	3,597	11.03
Washington.....	75,116	54,896	73.08	12,303	16.38	7,917	10.54
Oregon.....	174,768	142,143	81.33	20,932	11.98	11,693	6.69
California.....	864,694	549,529	63.55	217,652	25.17	97,513	11.28

TABLE 10.—*The three elements of population in 1870.*

States and Territories.	Total population.	Native white.	Per cent.	Foreign white.	Per cent.	Colored.	Per cent.
United States.....	38,558,371	28,085,402	72.84	5,503,975	14.27	4,968,994	12.89
North Atlantic Division.....	12,298,730	9,596,821	78.03	2,520,448	20.49	181,461	1.48
South Atlantic Division.....	5,853,610	3,468,405	59.25	166,833	2.85	2,218,372	37.90
South Central Division.....	6,434,410	3,995,051	62.09	232,920	3.62	2,206,439	34.29
South Central Division.....	12,981,111	10,365,228	79.85	2,333,275	17.97	282,608	2.18
Western Division.....	990,510	659,897	66.62	250,499	25.29	80,114	8.09
North Atlantic Division:							
Maine.....	626,915	575,929	91.87	48,880	7.80	2,106	.33
New Hampshire.....	318,300	288,086	90.51	29,611	9.30	603	.19
Vermont.....	320,551	282,458	88.45	47,155	14.27	938	.28
Massachusetts.....	1,457,351	1,089,934	74.79	353,222	24.24	14,195	.97
Rhode Island.....	217,353	156,823	72.15	55,396	25.49	5,134	2.36
Connecticut.....	537,454	413,912	77.01	113,397	21.15	9,905	1.84
New York.....	4,382,759	3,191,886	72.82	1,138,324	25.98	52,549	1.20
New Jersey.....	906,096	686,479	75.76	188,928	20.85	30,689	3.39
Pennsylvania.....	3,521,951	2,911,314	82.66	545,295	15.48	65,342	1.86
South Atlantic Division:							
Delaware.....	125,015	93,085	74.46	9,136	7.31	22,794	18.36
Maryland.....	780,894	522,087	66.86	83,410	10.68	175,397	22.46
District of Columbia.....	131,700	72,027	54.69	16,251	12.34	43,422	32.97
Virginia.....	1,225,163	698,339	57.00	13,750	1.12	513,074	41.88
West Virginia.....	442,014	406,942	92.07	17,091	3.86	17,981	4.07
North Carolina.....	1,071,361	675,441	63.05	3,029	.28	392,891	36.67
South Carolina.....	705,606	281,594	39.91	8,073	1.14	415,939	58.95
Georgia.....	1,184,109	627,890	53.02	11,126	.94	545,183	46.04
Florida.....	187,748	91,090	48.52	4,967	2.64	91,691	48.84
South Central Division:							
Kentucky.....	1,321,011	1,035,295	78.37	63,397	4.80	222,319	16.83
Tennessee.....	1,258,520	916,803	72.85	19,316	1.53	322,401	25.62
Alabama.....	996,992	511,422	51.30	9,962	1.00	475,608	47.70
Mississippi.....	827,922	371,721	44.90	11,175	1.35	445,026	53.75
Louisiana.....	726,915	300,309	41.31	61,756	8.50	364,850	50.19
Texas.....	818,579	502,314	61.36	62,386	7.62	253,879	31.02
Arkansas.....	484,471	357,187	73.73	4,928	1.01	122,356	25.26
Oklahoma.....							
North Central Division:							
Ohio.....	2,665,260	2,229,454	83.65	372,492	13.97	63,314	2.38
Indiana.....	1,680,637	1,514,363	90.11	141,474	8.42	24,800	1.47
Illinois.....	2,539,891	1,995,899	78.58	515,197	20.28	28,795	1.14
Michigan.....	1,184,059	899,274	75.95	268,008	22.63	16,777	1.42
Wisconsin.....	1,054,670	686,852	65.13	364,459	34.55	3,319	.31
Minnesota.....	439,706	277,560	63.12	160,697	36.55	1,449	.33
Iowa.....	1,194,020	983,518	82.37	204,689	17.14	5,813	.49
Missouri.....	1,721,295	1,380,882	80.23	222,264	12.91	118,149	6.86
North Dakota.....	14,181	8,072	56.92	4,815	33.95	1,294	9.13
South Dakota.....							
Nebraska.....	122,993	91,369	74.29	30,748	25.00	876	.71
Kansas.....	364,399	297,985	81.77	48,392	13.28	18,022	4.95
Western Division:							
Montana.....	20,595	12,276	59.61	6,030	29.28	2,289	11.11
Wyoming.....	9,118	5,356	58.74	3,370	36.96	392	4.30
Colorado.....	39,864	32,629	81.85	6,592	16.54	643	1.61
New Mexico.....	91,874	84,773	92.27	5,620	6.12	1,481	1.61
Arizona.....	9,658	3,792	39.26	5,789	59.94	77	.80
Utah.....	86,786	55,787	64.28	30,257	34.87	742	.85
Nevada.....	42,491	23,310	54.86	15,649	36.83	3,532	8.31
Idaho.....	14,999	7,007	46.72	3,611	24.07	4,381	29.21
Washington.....	23,955	17,405	72.66	4,790	20.00	1,760	7.34
Oregon.....	90,923	78,659	86.51	8,270	9.10	3,994	4.39
California.....	560,247	338,903	60.49	160,521	28.65	60,823	10.86



TABLE 11.—Percentage of illiterates to population 10 years of age and over in 1890 and 1880.

States and Territories.	Total.		Males.		Females.		Total whites.		Native whites.		Foreign whites.		Colored.	
	1890.	1880.	1890.	1880.	1890.	1880.	1890.	1880.	1890.	1880.	1890.	1880.	1890.	1880.
	1	2	3	4	5	6	7	8	9	10	11	12	13	14
United States.....	13.3	17.0	12.4	15.8	14.4	18.2	7.7	9.4	6.2	8.7	13.1	12.0	56.8	70.0
North Atlantic Division..	6.2	6.2	5.9	5.4	6.5	7.0	5.9	5.9	2.3	2.8	15.6	15.4	21.7	24.2
South Atlantic Division..	30.9	40.3	29.1	38.8	32.6	41.7	14.5	19.5	14.6	20.0	12.2	10.1	60.1	75.1
South Central Division...	29.7	29.5	27.6	37.8	31.9	41.3	15.3	21.6	15.0	22.0	20.2	15.6	61.2	76.0
North Central Division...	5.7	6.7	5.2	6.2	6.3	7.2	5.1	5.9	3.4	5.0	10.6	8.9	32.8	41.2
Western Division.....	8.3	11.3	8.1	10.1	8.7	13.6	6.2	8.8	4.5	8.0	19.4	9.2	41.5	33.2
North Atlantic Division:														
Maine.....	5.5	4.3	5.9	4.5	5.1	4.0	5.4	4.2	2.5	1.9	24.1	23.7	31.8	24.8
New Hampshire.....	6.8	5.0	7.5	5.1	6.2	4.0	6.8	5.0	1.5	1.1	26.3	26.9	23.3	15.8
Vermont.....	6.7	6.0	7.4	6.4	5.9	5.6	6.7	6.0	3.2	2.4	25.8	26.6	21.3	19.3
Massachusetts.....	6.2	6.5	5.3	5.3	7.0	7.6	6.1	6.4	.8	.7	16.2	19.6	15.4	15.1
Rhode Island.....	9.8	11.2	9.0	9.8	10.5	12.6	9.6	10.9	2.3	2.9	22.1	27.3	18.5	23.6
Connecticut.....	5.3	5.7	5.1	5.0	5.5	6.4	5.1	5.5	1.0	1.0	14.9	18.3	15.8	17.4
New York.....	5.5	5.5	5.2	4.9	5.8	6.1	5.4	5.3	1.8	2.2	13.1	12.5	18.4	21.2
New Jersey.....	6.5	6.2	6.2	5.6	6.8	6.7	5.7	5.3	2.7	3.2	13.3	11.1	28.4	30.5
Pennsylvania.....	6.8	7.1	6.5	5.9	7.0	8.3	6.4	6.7	3.5	4.8	17.8	15.1	23.2	27.1
South Atlantic Division:														
Delaware.....	14.3	17.5	13.8	16.8	14.9	18.3	7.4	9.1	6.2	8.1	16.8	18.5	49.5	57.5
Maryland.....	15.7	19.3	15.2	18.6	16.2	20.1	7.0	8.1	5.9	7.8	13.8	10.2	53.1	53.6
District of Columbia...	13.2	18.8	11.1	15.8	15.1	21.4	2.7	4.3	1.7	2.6	9.3	12.1	35.0	48.4
Virginia.....	30.2	40.6	29.6	40.2	30.8	41.1	13.9	18.2	14.0	18.5	10.1	5.4	37.2	73.2
West Virginia.....	14.4	19.9	13.3	18.5	15.5	21.4	13.0	18.3	12.9	18.6	15.1	13.5	44.4	55.0
North Carolina.....	35.7	48.3	33.0	45.8	38.3	50.7	23.0	31.5	23.1	31.7	5.0	3.3	60.1	77.4
South Carolina.....	45.0	55.4	42.3	53.6	47.6	57.1	17.9	21.9	18.1	22.4	6.3	4.9	64.1	78.5
Georgia.....	39.8	49.9	37.8	48.5	41.8	51.1	16.3	22.9	16.5	23.2	6.4	5.6	67.3	81.6
Florida.....	27.8	43.4	24.7	41.1	31.1	45.8	11.3	19.9	11.3	20.7	10.8	10.0	50.6	70.7
South Central Division:														
Kentucky.....	21.6	29.9	20.6	28.8	22.7	31.1	15.8	22.0	16.1	22.8	9.8	9.7	55.9	70.4
Tennessee.....	26.6	38.7	24.3	36.5	29.0	40.8	17.8	27.3	18.0	27.8	9.5	7.5	54.2	71.7
Alabama.....	41.0	50.9	38.8	49.6	43.2	52.1	18.2	24.7	18.4	25.0	7.9	7.7	69.1	80.6
Mississippi.....	40.0	49.5	37.8	48.1	42.2	50.9	11.9	16.3	11.9	16.6	10.1	6.0	60.9	75.2
Louisiana.....	45.8	49.1	43.8	48.0	47.6	50.1	20.1	18.4	20.3	19.8	18.7	10.9	72.1	79.1
Texas.....	19.7	29.7	18.3	28.3	21.4	31.4	10.8	15.3	8.3	13.9	29.6	24.7	52.5	75.4
Arkansas.....	26.6	38.0	23.7	35.4	29.9	40.8	16.3	25.0	16.6	25.5	7.5	5.6	53.6	75.0
Oklahoma.....	5.4	.....	5.0	.....	5.9	.....	3.5	.....	3.4	.....	6.1	.....	39.2	.....
North Central Division:														
Ohio.....	5.2	5.5	4.8	5.1	5.6	5.9	4.7	4.9	3.5	4.3	11.1	8.4	25.4	27.3
Indiana.....	6.3	7.5	5.8	6.9	6.9	8.2	5.8	7.0	3.5	6.8	11.0	8.9	32.2	35.6
Illinois.....	5.2	6.4	4.7	5.9	5.9	6.9	4.9	5.9	3.1	5.3	9.4	7.7	27.0	37.2
Michigan.....	5.9	5.2	6.1	5.3	5.8	4.9	5.7	4.8	2.5	2.3	12.4	10.7	29.2	28.5
Wisconsin.....	6.7	5.8	6.0	5.2	7.5	6.3	6.6	5.6	2.1	2.0	13.4	10.8	36.7	31.0
Minnesota.....	6.0	6.2	5.0	5.2	7.3	7.3	5.9	6.0	1.4	1.9	11.1	10.9	23.3	37.2
Iowa.....	3.6	3.9	3.2	3.6	4.1	4.3	3.5	3.8	1.8	2.6	9.3	8.1	26.4	30.0
Missouri.....	9.1	13.4	8.3	12.6	9.9	14.3	7.1	10.5	6.8	11.1	9.1	7.0	41.7	53.9
North Dakota.....	6.0	4.8	4.9	3.9	7.4	6.5	5.8	4.2	1.8	1.8	8.7	6.8	47.4	44.2
South Dakota.....	4.2	.....	3.6	.....	5.0	.....	4.1	.....	1.2	.....	9.0	.....	33.4	.....
Nebraska.....	3.1	3.6	2.8	3.3	3.6	4.1	2.8	3.5	1.3	2.3	7.3	6.4	25.7	39.7
Kansas.....	4.0	5.6	3.5	5.1	4.5	6.2	2.9	3.7	2.0	3.1	8.8	6.7	32.5	45.8
Western Division:														
Montana.....	5.5	5.3	5.7	4.6	4.8	7.8	4.1	2.2	1.6	1.4	8.2	3.8	36.3	35.8
Wyoming.....	3.4	3.4	3.3	2.8	3.7	4.9	3.0	2.5	1.3	1.7	7.1	4.1	16.8	14.7
Colorado.....	5.2	6.6	4.8	4.8	5.9	10.8	4.8	6.4	3.8	7.1	7.8	4.0	25.0	20.5
New Mexico.....	44.5	65.0	33.9	54.1	57.4	78.2	41.6	62.2	42.8	64.2	30.5	43.3	83.6	92.2
Arizona.....	23.4	17.7	20.3	14.5	23.1	26.9	21.1	10.8	7.9	8.1	42.2	26.8	50.9	23.7
Utah.....	5.6	9.1	4.7	8.2	6.6	10.0	5.1	8.5	2.3	5.9	10.3	11.8	46.1	52.3
Nevada.....	12.8	8.0	12.3	7.6	13.8	9.1	4.2	4.5	.8	1.1	10.0	8.4	59.7	26.7
Idaho.....	5.1	7.1	5.8	7.8	4.0	5.4	3.5	3.6	1.9	3.0	8.3	5.3	48.6	28.2
Washington.....	4.3	7.0	4.2	6.5	4.3	7.8	3.1	2.9	1.3	2.4	7.0	4.5	44.6	38.1
Oregon.....	4.1	5.7	4.5	6.4	3.5	4.6	3.0	3.6	1.8	3.5	7.9	4.4	27.6	27.8
California.....	7.7	7.8	8.9	8.2	5.8	7.2	4.5	4.4	1.7	2.0	10.5	8.6	39.3	29.8

TABLE 12.—Differences between percentages of 1880 and 1890, the + sign indicating increase and the - sign denoting decrease.

States and Territories.	Differences between the percentages of illiterates.							Differences between the percentages of population.		
	Total.	Male.	Female.	Total white.	Native white.	Foreign white.	Colored.	Native white.	Foreign white.	Colored.
	1	2	3	4	5	6	7	8	9	10
United States.....	- 3.7	- 3.4	- 3.8	- 1.7	- 2.5	+ 1.1	-13.2	- .22	+ 1.49	-1.27
North Atlantic Division..	0	+ .5	- .5	.0	- .5	+ .2	-2.5	-2.90	+ 2.91	-.01
South Atlantic Division..	- 9.4	- 9.7	- 9.1	- 5.0	- 5.4	+ 2.1	-15.0	+ 1.84	+ .03	-1.87
South Central Division...	- 9.8	-10.2	- 9.4	- 6.3	- 7.0	+ 4.6	-14.8	+ 2.21	- .13	-2.08
North Central Division...	- 1.0	- 1.0	- .9	- .8	- 1.6	+ 1.7	- 8.4	+ 1.05	+ 1.36	-.31
Western Division.....	- 3.6	- 2.0	- 4.9	- 2.6	- 4.1	+ 1.2	+ 8.3	+ 3.84	- .24	-3.60
North Atlantic Division:										
Maine.....	+ 1.2	+ 1.4	+ 1.1	+ 1.2	+ .6	+ .4	+ 7.0	- 2.82	+ 2.86	-.04
New Hampshire.....	+ 1.8	+ 2.4	+ 1.3	+ 1.8	+ .4	- .6	+ 7.5	- 5.82	+ 5.85	-.03
Vermont.....	+ .7	+ 1.0	+ .7	+ .7	+ .8	- .8	+ 2.0	- .90	+ .92	-.02
Massachusetts.....	- 1.3	0	- .6	- .3	+ .1	- 3.4	+ 3	- 4.37	+ 4.40	-.03
Rhode Island.....	- 1.4	- .8	- 2.1	- 1.3	- .6	- 5.2	- 5.1	- 3.82	+ 3.99	-.17
Connecticut.....	- .4	+ .1	- .9	- .4	0	- 3.4	- 1.6	- 3.51	+ 3.71	-.20
New York.....	0	+ .3	- .3	+ .1	- .4	+ .6	- 2.8	- 2.23	+ 2.32	-.09
New Jersey.....	+ .3	+ .6	+ .1	+ .4	+ .5	+ 2.2	- 2.1	- 3.03	+ 3.13	-.10
Pennsylvania.....	- .3	+ .6	- 1.3	- .3	- 1.3	+ 2.7	- 3.9	- 2.42	+ 2.33	+ .09
South Atlantic Division:										
Delaware.....	- 3.2	- 3.0	- 3.4	- 1.7	- 1.9	- 1.7	- 8.0	- .16	+ 1.33	-1.17
Maryland.....	- 3.6	- 3.4	- 3.9	- 1.1	- 1.9	+ 3.6	- 9.5	+ 1.61	+ .17	-1.78
District of Columbia.....	- 5.6	- 4.7	- 6.3	- 1.6	- .9	- 2.8	-13.4	+ 2.23	- 1.52	- .71
Virginia.....	-10.4	-10.6	-10.3	- 4.3	- 4.5	+ 4.7	-16.0	+ 3.23	+ .13	-3.36
West Virginia.....	- 5.5	- 5.2	- 5.9	- 5.3	- 5.7	+ 1.6	-10.6	+ .38	- .48	+ .10
North Carolina.....	-12.6	-12.8	-12.4	- 8.5	- 8.6	+ 1.7	-17.3	+ 3.31	- .03	-3.28
South Carolina.....	-10.4	-11.3	- 9.5	- 4.0	- 4.3	+ 1.4	-14.4	+ 1.07	- .22	- .85
Georgia.....	-10.1	-10.7	- 9.3	- 6.6	- 6.7	+ .8	-14.3	+ .30	- .02	- .28
Florida.....	-15.6	-16.4	-14.7	- 8.6	- 9.4	+ .8	-20.1	+ 2.77	+ 1.78	-4.55
South Central Division:										
Kentucky.....	- 8.3	- 8.2	- 8.4	- 6.2	- 6.7	+ .1	-14.5	+ 2.45	+ .42	-2.03
Tennessee.....	-12.1	-12.2	-11.8	- 9.5	- 9.8	+ 2.0	-17.5	+ 1.74	+ .04	-1.78
Alabama.....	- 9.9	-10.8	- 8.9	- 6.5	- 6.6	+ .2	-11.5	+ 2.44	+ .22	-2.66
Mississippi.....	- 9.5	-10.3	- 8.7	- 4.4	- 4.7	+ 4.1	-14.3	+ .08	- .19	+ .11
Louisiana.....	- 3.3	- 4.2	- 2.2	+ 1.7	+ .5	+ 7.8	- 7.0	+ 2.70	- 1.24	-1.52
Texas.....	-10.0	-10.0	-10.0	- 4.5	- 5.6	+ 4.9	-22.9	+ 3.24	- .36	-2.83
Arkansas.....	-11.4	-11.7	-10.9	- 8.7	- 8.9	+ 1.9	-21.4	- 1.12	- .02	+1.14
North Central Division:										
Ohio.....	- .3	- .3	- .3	- .2	- .8	+ 2.7	- 1.9	- .03	+ .16	-.13
Indiana.....	- 1.2	- 1.1	- 1.3	- 1.2	- 1.5	+ 2.1	- 3.4	+ .54	- .62	+ .08
Illinois.....	- 1.2	- 1.2	- 1.0	- 1.0	- 2.2	+ 1.7	-10.2	- 3.03	+ 3.04	-.01
Michigan.....	+ .7	+ .8	+ .9	+ .9	+ .2	+ 1.7	+ .7	- 1.90	+ 2.26	-.36
Wisconsin.....	+ .9	+ .8	+ 1.2	+ 1.0	+ .1	+ 2.6	- 5.7	+ .11	- .04	-.07
Minnesota.....	- .2	- .2	0	- .1	- .5	+ .2	-13.9	- 1.55	+ 1.62	-.07
Iowa.....	- .3	- .4	- .2	- .3	- .8	+ 1.2	- 3.6	- .79	+ .84	-.05
Missouri.....	- 4.3	- 4.3	- 4.4	- 3.4	- 4.3	+ 2.1	-12.2	+ 2.09	- 1.01	-1.08
North Dakota.....	+ 1.2	+ 1.0	+ .9	+ 1.6	0	+ 1.9	+ 3.2	- 5.34	+ 6.51	-1.17
South Dakota.....	- .6	- .3	- 1.5	- .1	- .6	+ 2.2	-10.8	+11.42	-10.38	-1.04
Nebraska.....	- .5	- .5	- .5	- .7	- 1.0	+ .9	- 5.0	+ 1.87	- 2.42	+ .55
Kansas.....	- 1.6	- 1.6	- 1.7	- .8	- 1.1	+ 2.1	-14.3	+ 1.56	- .70	-.86
Western Division:										
Montana.....	+ .2	+ 1.1	- 3.0	+ 1.9	+ .2	+ 4.4	+ .5	- .35	+ 6.30	-5.95
Wyoming.....	0	+ .5	- 1.2	+ .5	- .4	+ 3.0	+ 2.1	+ 4.08	+ .06	-4.14
Colorado.....	- 1.4	0	- 4.9	- 1.6	- 3.3	+ 3.8	+ 4.5	- .10	- .13	+ .23
New Mexico.....	-20.5	-20.2	-20.8	-20.6	-21.4	-12.8	-11.6	+ 1.57	+ .42	-1.99
Arizona.....	+ 5.7	+ 5.8	+ 2.2	+ 4.3	- .2	+15.4	+27.2	+12.47	- 6.20	-6.27
Utah.....	- 3.5	- 3.5	- 3.4	- 3.4	- 3.6	- 1.5	- 6.2	+ 5.22	- 5.11	- .11
Nevada.....	+ 4.8	+ 4.7	+ 4.7	- .3	- .3	+ 1.6	+33.0	+ 5.86	- 6.46	+ .60
Idaho.....	- 2.0	- 2.0	- 1.4	- .1	- 1.1	+ 3.0	+20.4	+10.14	- 1.91	-8.23
Washington.....	- 2.7	- 2.3	- 3.5	+ .2	- 1.1	+ 2.5	+ 6.5	- .29	+ 8.29	-8.00
Oregon.....	- 1.6	- 1.9	- 1.1	- .6	- 1.7	+ 3.5	- .2	- .40	+ 3.26	-2.86
California.....	- .1	+ .7	- 1.4	+ .1	- .3	+ 1.9	+ 9.5	+ 4.17	- .87	-3.30

TABLE 13.—*Showing per cent of decrease or increase in the percentage of illiterates between 1880 and 1890, the + sign indicating increase and the - sign denoting decrease.*

States and Territories.	Total.	Native white.	Foreign white.	Total white.	Colored.
United States.....	-21.8	-28.7	+ 9.2	-18.1	- 18.9
North Atlantic Division.....	0	-17.9	+ 1.3	0	- 10.3
South Atlantic Division.....	-23.3	-27.0	+ 20.8	-25.6	- 20.0
South Central Division.....	-24.8	-31.8	+ 29.5	-29.2	- 19.5
North Central Division.....	-14.8	-32.0	+ 19.1	-13.6	- 23.4
Western Division.....	-26.5	-47.7	+ 13.0	-29.5	+ 25.0
North Atlantic Division:					
Maine.....	+27.9	+31.6	+ 1.7	+28.6	+ 28.2
New Hampshire.....	+36.0	+36.4	- 2.2	+36.0	+ 47.5
Vermont.....	+11.7	+33.3	- 3.0	+11.7	+ 10.4
Massachusetts.....	- 4.6	+14.3	-17.3	- 4.7	+ 2.0
Rhode Island.....	-12.5	-20.7	-19.0	-11.9	- 21.6
Connecticut.....	- 7.0	0	-18.6	- 7.3	- 9.2
New York.....	0	-18.2	+ 4.8	+ 1.9	- 13.2
New Jersey.....	+ 4.8	-15.6	+19.8	+ 7.5	- 6.9
Pennsylvania.....	- 4.2	-27.1	+17.9	- 4.5	- 14.4
South Atlantic Division:					
Delaware.....	-18.3	-23.5	- 9.2	-18.7	- 13.9
Maryland.....	-18.7	-24.4	+ 35.3	-13.6	- 16.0
District of Columbia.....	-29.8	-34.6	- 23.1	-37.2	- 27.7
Virginia.....	-25.6	-24.3	+ 87.0	-23.6	- 21.9
West Virginia.....	-27.6	-30.6	+11.9	-29.0	- 19.3
North Carolina.....	-26.1	-27.1	+15.5	-27.0	- 22.4
South Carolina.....	-18.8	-19.2	+28.6	-18.3	- 18.3
Georgia.....	-20.2	-28.9	+14.3	-28.8	- 17.5
Florida.....	-35.9	-45.4	+ 8.0	-43.2	- 28.4
South Central Division:					
Kentucky.....	-27.8	-29.4	+ 1.0	-28.2	- 20.6
Tennessee.....	-31.3	-35.3	+26.7	-34.8	- 24.4
Alabama.....	-19.4	-26.4	+ 2.6	-26.3	- 14.3
Mississippi.....	-19.2	-28.3	+ 68.3	-27.0	- 19.0
Louisiana.....	- 6.7	+ 2.5	+71.6	+ 9.2	- 8.8
Texas.....	-33.7	-40.3	+19.8	-29.4	- 30.4
Arkansas.....	-30.0	-34.9	+ 33.9	-34.8	- 28.5
North Central Division:					
Ohio.....	- 5.5	-18.6	+ 32.1	- 4.1	- 7.0
Indiana.....	-16.0	-22.1	+ 23.6	-17.1	- 9.6
Illinois.....	-18.8	-41.5	+ 22.1	-16.9	- 27.4
Michigan.....	+13.5	+ 8.7	+15.9	+18.8	+ 2.5
Wisconsin.....	+15.5	+ 5.0	+24.1	+17.9	- 18.4
Minnesota.....	- 3.2	-26.3	+ 1.8	-16.7	- 37.4
Iowa.....	- 7.7	-30.8	+14.8	- 7.9	- 12.0
Missouri.....	-32.1	-38.7	+ 30.0	-32.4	- 22.6
North Dakota.....	+25.0	0	+27.9	+38.1	+ 7.2
South Dakota.....	-12.5	-33.3	+ 32.4	- 2.4	- 24.5
Nebraska.....	-13.9	-43.5	+14.1	-20.0	- 16.3
Kansas.....	-28.6	-35.5	+ 31.3	-21.6	- 30.6
Western Division:					
Montana.....	+ 3.8	+14.3	+115.8	+86.4	+ 1.4
Wyoming.....	0	-23.5	+73.2	+20.0	+ 14.3
Colorado.....	-21.2	-46.5	+ 95.0	-25.0	+ 22.0
New Mexico.....	-31.5	-33.3	- 29.6	-33.1	- 12.6
Arizona.....	+32.2	- 2.5	+ 57.5	+25.6	+114.8
Utah.....	-38.5	-61.0	-12.7	-40.0	- 11.9
Nevada.....	+60.0	-27.3	+19.0	- 6.7	+123.6
Idaho.....	-28.2	-36.7	+ 56.6	- 2.8	+ 72.3
Washington.....	-38.6	-45.8	+ 55.6	+ 6.9	+ 17.1
Oregon.....	-28.1	-48.6	+79.5	-16.7	- 7
California.....	- 1.3	-15.0	+ 22.1	+ 2.3	+ 31.9



TABLE 14.—Showing the rank of each State in percentage of illiteracy to total populations 10 years of age and over.

1890.			1880.			1870.		
Rank.	States and Territories.	Per cent.	Rank.	States and Territories.	Per cent.	Rank.	States and Territories.	Per cent.
1	Nebraska.....	3.1	1	Wyoming.....	3.4	1	Nevada.....	2.4
2	Wyoming.....	3.4	2	Nebraska.....	3.6	2	New Hampshire..	3.8
3	Iowa.....	3.6	3	Iowa.....	3.6	3	Maine.....	3.9
4	Kansas.....	4.0	4	Maine.....	4.3	4	Montana.....	5.1
5	Oregon.....	4.1	5	North Dakota.....	4.8	5	Iowa.....	5.1
6	South Dakota.....	4.2	5	South Dakota.....	4.8	6	Nebraska.....	5.5
7	Washington.....	4.3	6	New Hampshire..	5.0	7	Michigan.....	6.1
8	Idaho.....	5.1	7	Michigan.....	5.2	8	Oregon.....	6.8
9	Colorado.....	5.2	8	Montana.....	5.3	9	Vermont.....	6.8
10	Illinois.....	5.2	9	New York.....	5.5	10	Connecticut.....	7.0
11	Ohio.....	5.2	10	Ohio.....	5.5	11	New York.....	7.1
12	Connecticut.....	5.3	11	Kansas.....	5.6	12	California.....	7.4
13	Oklahoma.....	5.4	12	Connecticut.....	5.7	13	Illinois.....	7.4
14	Maine.....	5.5	13	Oregon.....	5.7	14	Wisconsin.....	7.4
15	Montana.....	5.5	14	Wisconsin.....	5.8	15	Washington.....	7.5
16	New York.....	5.5	15	Vermont.....	6.0	16	Wyoming.....	7.5
17	Utah.....	5.6	16	Minnesota.....	6.2	17	Minnesota.....	8.0
18	Michigan.....	5.9	17	New Jersey.....	6.2	18	New Jersey.....	8.6
19	Minnesota.....	6.0	18	Illinois.....	6.4	19	Massachusetts.....	8.4
20	North Dakota.....	6.0	19	Massachusetts.....	6.5	20	Pennsylvania.....	8.6
21	Massachusetts.....	6.2	20	Colorado.....	6.6	21	Ohio.....	8.9
22	Indiana.....	6.3	21	Washington.....	7.0	22	Kansas.....	9.5
23	New Jersey.....	6.5	22	Idaho.....	7.1	23	Indiana.....	10.6
24	Vermont.....	6.7	23	Pennsylvania.....	7.1	24	Rhode Island.....	12.6
25	Wisconsin.....	6.7	24	Indiana.....	7.5	25	Utah.....	13.0
26	New Hampshire.....	6.8	25	California.....	7.8	26	Dakota.....	14.7
27	Pennsylvania.....	6.8	26	Nevada.....	8.0	27	Missouri.....	18.5
28	California.....	7.7	27	Utah.....	9.1	28	Colorado.....	22.5
29	Missouri.....	9.1	28	Rhode Island.....	11.2	29	Maryland.....	23.6
30	Rhode Island.....	9.8	29	Missouri.....	13.4	30	Delaware.....	25.0
31	Nevada.....	12.8	30	Delaware.....	17.5	31	Idaho.....	25.7
32	District of Columbia.....	13.2	31	Arizona.....	17.7	32	West Virginia.....	26.4
33	Delaware.....	14.3	32	District of Columbia.....	18.8	33	District of Columbia.....	28.6
34	West Virginia.....	14.4	33	Maryland.....	19.3	34	Arizona.....	32.4
35	Maryland.....	15.7	34	West Virginia.....	19.9	35	Kentucky.....	35.7
36	Texas.....	19.7	35	Texas.....	29.7	36	Texas.....	38.8
37	Kentucky.....	21.6	36	Kentucky.....	29.9	37	Arkansas.....	39.0
38	Arizona.....	23.4	37	Arkansas.....	38.0	38	Tennessee.....	40.9
39	Arkansas.....	26.6	38	Tennessee.....	38.7	39	Virginia.....	50.1
40	Tennessee.....	26.6	39	Virginia.....	40.6	40	North Carolina.....	51.7
41	Florida.....	27.8	40	Florida.....	43.4	41	Louisiana.....	52.5
42	Virginia.....	30.2	41	North Carolina.....	48.3	42	Mississippi.....	53.9
43	North Carolina.....	35.7	42	Louisiana.....	49.1	43	Alabama.....	54.2
44	Georgia.....	39.8	43	Mississippi.....	49.5	44	Florida.....	54.8
45	Mississippi.....	40.0	44	Georgia.....	49.9	45	Georgia.....	56.1
46	Alabama.....	41.0	45	Alabama.....	50.9	46	South Carolina.....	57.6
47	New Mexico.....	44.5	46	South Carolina.....	55.4	47	New Mexico.....	78.6
48	South Carolina.....	45.0	47	New Mexico.....	65.0			
49	Louisiana.....	45.8						

TABLE 15.—Showing the rank of each State in percentage of illiteracy to the native white population 10 years of age and over.

1890.			1880.			1870.		
Rank.	States and Territories.	Per cent.	Rank.	States and Territories.	Per cent.	Rank.	States and Territories.	Per cent.
1	Massachusetts.....	.8	1	Massachusetts.....	.7	1	Nevada.....	.4
2	Nevada.....	.8	2	Connecticut.....	1.0	2	Massachusetts.....	.7
3	Connecticut.....	1.0	3	Nevada.....	1.1	3	New Hampshire.....	.8
4	South Dakota.....	1.2	4	New Hampshire.....	1.1	4	Connecticut.....	1.3
5	Nebraska.....	1.3	5	Montana.....	1.4	5	Maine.....	1.8
6	Washington.....	1.3	6	Wyoming.....	1.7	6	Vermont.....	1.8
7	Wyoming.....	1.3	7	North Dakota.....	1.8	7	Idaho.....	2.0
8	Minnesota.....	1.4	8	South Dakota.....		8	Dakota.....	2.1
9	New Hampshire.....	1.5	9	Maine.....	1.9	9	Montana.....	2.5
10	Montana.....	1.6	10	Minnesota.....	1.9	10	New York.....	2.7
11	California.....	1.7	11	California.....	2.0	11	Washington.....	2.9
12	District of Columbia.....	1.7	12	Wisconsin.....	2.0	12	Michigan.....	3.0
13	Iowa.....	1.8	13	New York.....	2.2	13	Rhode Island.....	3.1
14	North Dakota.....	1.8	14	Michigan.....	2.3	14	California.....	3.2
15	New York.....	1.8	15	Nebraska.....	2.3	15	Minnesota.....	3.4
16	Oregon.....	1.8	16	Washington.....	2.4	16	Wisconsin.....	3.4
17	Idaho.....	1.9	17	Vermont.....	2.4	17	Iowa.....	3.7
18	Kansas.....	2.0	18	District of Columbia.....	2.6	18	Wyoming.....	4.1
19	Wisconsin.....	2.1	19	Iowa.....	2.6	19	New Jersey.....	4.5
20	Rhode Island.....	2.5	20	Rhode Island.....	2.9	20	District of Columbia.....	5.3
21	Utah.....	2.3	21	Idaho.....	3.0	21	Oregon.....	5.3
22	Maine.....	2.5	22	Kansas.....	3.1	22	Pennsylvania.....	5.5
23	Michigan.....	2.5	23	New Jersey.....	3.2	23	Nebraska.....	5.8
24	New Jersey.....	2.7	24	Oregon.....	3.5	24	Illinois.....	6.3
25	Illinois.....	3.1	25	Ohio.....	4.3	25	Kansas.....	6.5
26	Vermont.....	3.2	26	Pennsylvania.....	4.8	26	Ohio.....	7.3
27	Oklahoma.....	3.4	27	Illinois.....	5.3	27	Arizona.....	9.7
28	Ohio.....	3.5	28	Utah.....	5.9	28	Indiana.....	10.1
29	Pennsylvania.....	3.5	29	Indiana.....	6.8	29	Maryland.....	10.5
30	Colorado.....	3.8	30	Colorado.....	7.1	30	Utah.....	12.5
31	Indiana.....	5.3	31	Maryland.....	7.8	31	Delaware.....	13.2
32	Maryland.....	5.9	32	Arizona.....	8.1	32	Texas.....	15.4
33	Delaware.....	6.2	33	Delaware.....	8.1	33	Missouri.....	16.1
34	Missouri.....	6.8	34	Texas.....	11.1	34	Mississippi.....	17.8
35	Arizona.....	7.9	35	Mississippi.....	13.9	35	Louisiana.....	21.3
36	Texas.....	8.3	36	Virginia.....	16.6	36	Virginia.....	23.8
37	Florida.....	11.3	37	West Virginia.....	18.5	37	West Virginia.....	24.5
38	Mississippi.....	11.9	38	Louisiana.....	18.6	38	Alabama.....	24.8
39	West Virginia.....	12.9	39	Florida.....	19.8	39	Arkansas.....	25.3
40	Virginia.....	14.0	40	South Carolina.....	20.7	40	South Carolina.....	26.5
41	Kentucky.....	16.1	41	Kentucky.....	22.4	41	Colorado.....	27.0
42	Georgia.....	16.5	42	Georgia.....	22.8	42	Kentucky.....	27.2
43	Arkansas.....	16.6	43	Alabama.....	23.2	43	Georgia.....	27.4
44	Tennessee.....	18.0	44	Tennessee.....	25.0	44	Tennessee.....	27.4
45	South Carolina.....	18.1	45	Arkansas.....	25.5	45	Florida.....	28.9
46	Alabama.....	18.4	46	Tennessee.....	27.8	46	North Carolina.....	53.7
47	Louisiana.....	20.3	47	North Carolina.....	31.7	47	New Mexico.....	80.8
48	North Carolina.....	23.1						
49	New Mexico.....	42.8						

TABLE 16.—Showing the rank of each State in percentage of illiteracy to the foreign white population 10 years of age and over.

1890.			1880.			1870.		
Rank.	States and Territories.	Per cent.	Rank.	States and Territories.	Per cent.	Rank.	States and Territories.	Per cent.
1	North Carolina...	5.0	1	North Carolina...	3.3	1	Nevada.....	3.8
2	Oklahoma.....	6.1	2	Montana.....	3.8	2	Colorado.....	3.9
3	South Carolina...	6.3	3	Colorado.....	4.0	3	North Carolina...	3.9
4	Georgia.....	6.4	4	Wyoming.....	4.1	4	Nebraska.....	4.4
5	Washington.....	7.0	5	Oregon.....	4.4	5	Arkansas.....	6.1
6	Wyoming.....	7.1	6	Washington.....	4.5	6	Montana.....	6.7
7	Nebraska.....	7.3	7	South Carolina...	4.9	7	Missouri.....	7.2
8	Arkansas.....	7.5	8	Idaho.....	5.3	8	Mississippi.....	7.5
9	Colorado.....	7.8	9	Virginia.....	5.4	9	Oregon.....	7.6
10	Alabama.....	7.9	10	Arkansas.....	5.6	10	South Carolina...	8.2
11	Oregon.....	7.9	11	Georgia.....	5.6	11	Illinois.....	8.6
12	Montana.....	8.2	12	Mississippi.....	6.0	12	Kansas.....	8.7
13	Idaho.....	8.3	13	Nebraska.....	6.4	13	Alabama.....	9.0
14	North Dakota.....	8.7	14	Kansas.....	6.7	14	Wyoming.....	9.1
15	Kansas.....	8.8	15	{North Dakota.....}	6.8	15	Tennessee.....	9.3
16	South Dakota.....	9.0	16	{South Dakota.....}	6.8	16	Virginia.....	9.3
17	Missouri.....	9.1	17	Missouri.....	7.0	17	Georgia.....	9.9
18	District of Colum- bia.....	9.3	18	Tennessee.....	7.5	18	Indiana.....	10.2
19	Iowa.....	9.3	19	Alabama.....	7.7	19	Iowa.....	10.4
20	Illinois.....	9.4	20	Illinois.....	7.7	20	Maryland.....	10.4
21	Tennessee.....	9.5	21	Iowa.....	8.1	21	Idaho.....	10.7
22	Kentucky.....	9.8	22	Nevada.....	8.4	22	Washington.....	10.7
23	Nevada.....	10.0	23	Ohio.....	8.4	23	Ohio.....	10.8
24	Mississippi.....	10.1	24	California.....	8.6	24	Florida.....	11.6
25	Virginia.....	10.1	25	Indiana.....	8.9	25	Wisconsin.....	11.7
26	Utah.....	10.3	26	Kentucky.....	9.7	26	Kentucky.....	11.8
27	California.....	10.5	27	Florida.....	10.0	27	Michigan.....	11.8
28	Florida.....	10.8	28	Maryland.....	10.2	28	Minnesota.....	12.1
29	Indiana.....	11.0	29	Michigan.....	10.7	29	California.....	12.3
30	Minnesota.....	11.1	30	Wisconsin.....	10.8	30	Louisiana.....	12.3
31	Ohio.....	11.1	31	Louisiana.....	10.9	31	Utah.....	12.9
32	Michigan.....	12.4	32	Minnesota.....	10.9	32	New Jersey.....	13.5
33	New York.....	13.1	33	New Jersey.....	11.1	33	District of Colum- bia.....	13.8
34	New Jersey.....	13.3	34	Utah.....	11.8	34	New York.....	15.1
35	Wisconsin.....	13.4	35	District of Colum- bia.....	12.1	35	Dakota.....	17.0
36	Maryland.....	13.8	36	New York.....	12.5	36	Pennsylvania.....	17.9
37	Connecticut.....	14.9	37	West Virginia.....	13.5	37	West Virginia.....	18.3
38	West Virginia.....	15.1	38	Pennsylvania.....	15.1	38	Connecticut.....	21.5
39	Massachusetts.....	16.2	39	Connecticut.....	18.3	39	Maine.....	23.1
40	Delaware.....	16.8	40	Delaware.....	18.5	40	Massachusetts.....	25.9
41	Pennsylvania.....	17.8	41	Massachusetts.....	19.6	41	Delaware.....	27.2
42	Louisiana.....	18.7	42	Maine.....	23.7	42	New Hampshire.....	27.3
43	Rhode Island.....	22.1	43	Texas.....	24.7	43	Vermont.....	29.9
44	Maine.....	24.1	44	Vermont.....	26.6	44	Texas.....	30.4
45	Vermont.....	25.8	45	Arizona.....	26.8	45	Rhode Island.....	32.2
46	New Hampshire.....	26.3	46	New Hampshire.....	26.9	46	Arizona.....	43.8
47	Texas.....	29.6	47	Rhode Island.....	27.3	47	New Mexico.....	52.8
48	New Mexico.....	30.5						
49	Arizona.....	42.2	49	New Mexico.....	43.3			



TABLE 17.—Showing the rank of each State in percentage of illiteracy to the total white population 10 years of age and over.

1890			1880.			1870.		
Rank.	States and Territories.	Per cent.	Rank.	States and Territories.	Per cent.	Rank.	States and Territories.	Per cent.
1	District of Columbia.....	2.7	1	Montana.....	2.2	1	Nevada.....	2.0
2	Nebraska.....	2.8	2	Wyoming.....	2.5	2	Maine.....	3.8
3	Kansas.....	2.9	3	Washington.....	2.9	3	New Hampshire.....	3.8
4	Oregon.....	3.0	4	Nebraska.....	3.5	4	Montana.....	4.0
5	Wyoming.....	3.0	5	Idaho.....	3.6	5	Washington.....	5.2
6	Washington.....	3.1	6	Oregon.....	3.6	6	Iowa.....	5.3
7	Idaho.....	3.5	7	Kansas.....	3.7	7	Nebraska.....	5.3
8	Iowa.....	3.5	8	Iowa.....	3.8	8	Idaho.....	5.5
9	Oklahoma.....	3.5	9	Maine.....	4.2	9	Michigan.....	5.6
10	Montana.....	4.1	10	North Dakota.....	4.2	10	Oregon.....	5.6
11	South Dakota.....	4.1	11	South Dakota.....	4.2	11	Wyoming.....	6.2
12	Nevada.....	4.2	12	District of Columbia.....	4.3	12	Connecticut.....	6.7
13	California.....	4.5	13	California.....	4.4	13	New York.....	6.8
14	Ohio.....	4.7	14	Nevada.....	4.5	14	Vermont.....	6.8
15	Colorado.....	4.8	15	Michigan.....	4.8	15	Illinois.....	6.9
16	Illinois.....	4.9	16	Ohio.....	4.9	16	Kansas.....	6.9
17	Connecticut.....	5.1	17	New Hampshire.....	5.0	17	California.....	7.0
18	Utah.....	5.1	18	New Jersey.....	5.3	18	New Jersey.....	7.1
19	Maine.....	5.4	19	New York.....	5.3	19	District of Columbia.....	7.3
20	New York.....	5.4	20	Connecticut.....	5.5	20	Wisconsin.....	7.3
21	Michigan.....	5.7	21	Wisconsin.....	5.6	21	Minnesota.....	7.9
22	New Jersey.....	5.7	22	Illinois.....	5.9	22	Ohio.....	8.0
23	Indiana.....	5.8	23	Minnesota.....	6.0	23	Pennsylvania.....	8.1
24	North Dakota.....	5.8	24	Vermont.....	6.0	24	Massachusetts.....	8.3
25	Minnesota.....	5.9	25	Colorado.....	6.4	25	Dakota.....	9.4
26	Massachusetts.....	6.1	26	Massachusetts.....	6.4	26	Indiana.....	10.1
27	Pennsylvania.....	6.4	27	Pennsylvania.....	6.7	27	Maryland.....	10.4
28	Wisconsin.....	6.6	28	Indiana.....	7.0	28	Rhode Island.....	12.4
29	Vermont.....	6.7	29	Maryland.....	8.1	29	Utah.....	12.7
30	New Hampshire.....	6.8	30	Utah.....	8.5	30	Missouri.....	14.4
31	Maryland.....	7.0	31	Delaware.....	9.1	31	Delaware.....	14.8
32	Missouri.....	7.1	32	Missouri.....	10.5	32	Mississippi.....	17.4
33	Delaware.....	7.4	33	Rhode Island.....	10.9	33	Texas.....	17.7
34	Rhode Island.....	9.6	34	Texas.....	15.3	34	Louisiana.....	19.2
35	Texas.....	10.8	35	Mississippi.....	16.3	35	Colorado.....	22.0
36	Florida.....	11.3	36	Arizona.....	16.8	36	Virginia.....	23.4
37	Mississippi.....	11.9	37	Virginia.....	18.2	37	West Virginia.....	24.2
38	West Virginia.....	13.0	38	West Virginia.....	18.3	38	Alabama.....	24.4
39	Virginia.....	13.9	39	Louisiana.....	18.4	39	Arkansas.....	25.0
40	Kentucky.....	15.8	40	Florida.....	19.9	40	South Carolina.....	25.8
41	Arkansas.....	16.3	41	South Carolina.....	21.9	41	Kentucky.....	26.0
42	Georgia.....	16.3	42	Kentucky.....	22.0	42	Tennessee.....	26.9
43	Tennessee.....	17.8	43	Georgia.....	22.9	43	Georgia.....	27.0
44	South Carolina.....	17.9	44	Alabama.....	24.7	44	Florida.....	27.6
45	Alabama.....	18.2	45	Arkansas.....	25.0	45	Arizona.....	33.3
46	Louisiana.....	20.1	46	Tennessee.....	27.3	46	North Carolina.....	33.5
47	Arizona.....	21.1	47	North Carolina.....	31.5	47	New Mexico.....	78.4
48	North Carolina.....	23.0		New Mexico.....	62.2			
49	New Mexico.....	41.6						

TABLE 18.—Showing the rank of each State in percentage of illiteracy to the colored population 10 years of age and over.

1890.			1889.			1870.		
Rank.	States and Territories.	Per cent.	Rank.	States and Territories.	Per cent.	Rank.	States and Territories.	Per cent.
1	Massachusetts.....	15.4	1	Wyoming.....	14.7	1	Nevada.....	6.3
2	Connecticut.....	15.8	2	Massachusetts.....	15.1	2	California.....	9.6
3	Wyoming.....	16.8	3	New Hampshire.....	15.8	3	Maine.....	10.3
4	New York.....	18.4	4	Connecticut.....	17.4	4	Montana.....	12.2
5	Rhode Island.....	18.5	5	Vermont.....	19.3	5	Vermont.....	16.1
6	Vermont.....	21.3	6	Colorado.....	20.5	6	New Hampshire.....	18.2
7	Pennsylvania.....	21.2	7	New York.....	21.2	7	Massachusetts.....	18.5
8	Minnesota.....	23.3	8	Rhode Island.....	23.6	8	Rhode Island.....	20.9
9	New Hampshire.....	23.3	9	Arizona.....	23.7	9	Connecticut.....	21.0
10	Colorado.....	25.0	10	Maine.....	24.8	10	Wisconsin.....	23.6
11	Ohio.....	25.4	11	Nevada.....	26.7	11	New York.....	25.4
12	Nebraska.....	25.7	12	Pennsylvania.....	27.1	12	Oregon.....	26.5
13	Iowa.....	26.4	13	Ohio.....	27.3	13	Pennsylvania.....	30.9
14	Illinois.....	27.0	14	Oregon.....	27.8	14	Nebraska.....	32.0
15	Oregon.....	27.6	15	Idaho.....	28.2	15	Washington.....	33.1
16	New Jersey.....	28.4	16	Michigan.....	28.5	16	Wyoming.....	34.6
17	Michigan.....	29.2	17	California.....	29.8	17	New Jersey.....	35.4
18	Maine.....	31.8	18	Iowa.....	30.0	18	Arizona.....	35.8
19	Indiana.....	32.2	19	New Jersey.....	30.5	19	Iowa.....	35.8
20	Kansas.....	32.5	20	Nebraska.....	30.7	20	Michigan.....	36.6
21	South Dakota.....	33.4	21	Wisconsin.....	31.0	21	Utah.....	38.7
22	District of Columbia.....	35.0	22	Indiana.....	35.6	22	Minnesota.....	41.0
23	Montana.....	36.3	23	Montana.....	35.8	23	Ohio.....	44.3
24	Wisconsin.....	36.7	24	Illinois.....	37.2	24	Indiana.....	46.1
25	California.....	39.3	25	Minnesota.....	37.2	25	Illinois.....	46.5
26	Missouri.....	41.7	26	Washington.....	38.1	26	Colorado.....	48.9
27	West Virginia.....	44.4	27	Dakota.....	44.2	27	Kansas.....	59.1
28	Washington.....	44.6	28	Kansas.....	46.8	28	Idaho.....	66.7
29	Utah.....	46.1	29	District of Columbia.....	48.4	29	Maryland.....	69.5
30	North Dakota.....	47.4	30	Utah.....	52.3	30	District of Columbia.....	70.5
31	Idaho.....	48.6	31	Missouri.....	53.9	31	Delaware.....	71.3
32	Delaware.....	49.5	32	West Virginia.....	55.0	32	Missouri.....	72.7
33	Maryland.....	50.1	33	Delaware.....	57.5	33	Dakota.....	74.3
34	Florida.....	50.6	34	Maryland.....	59.6	34	West Virginia.....	77.4
35	Arizona.....	50.9	35	Kentucky.....	70.4	35	South Carolina.....	81.1
36	Texas.....	52.5	36	Florida.....	79.7	36	Arkansas.....	81.2
37	Virginia.....	52.7	37	Tennessee.....	71.7	37	Tennessee.....	82.4
38	Arkansas.....	53.6	38	Virginia.....	73.2	38	Kentucky.....	83.8
39	Tennessee.....	54.2	39	Arkansas.....	75.0	39	Florida.....	84.1
40	Kentucky.....	55.9	40	Mississippi.....	75.2	40	North Carolina.....	84.8
41	Virginia.....	57.2	41	Texas.....	75.4	41	Louisiana.....	85.9
42	Nevada.....	59.7	42	North Carolina.....	77.4	42	Mississippi.....	87.0
43	North Carolina.....	60.1	43	South Carolina.....	78.5	43	New Mexico.....	87.1
44	Mississippi.....	60.9	44	Louisiana.....	79.1	44	Alabama.....	88.1
45	South Carolina.....	64.1	45	Alabama.....	80.6	45	Texas.....	88.7
46	Georgia.....	67.3	46	Georgia.....	81.6	46	Virginia.....	88.9
47	Alabama.....	69.1	47	New Mexico.....	92.2	47	Georgia.....	92.1
48	Louisiana.....	72.1						
49	New Mexico.....	89.6						

TABLE 19.—*School and certain other statistics of 1890.*

States and Territories.	Area in square miles.	Population per square mile.	Persons of school age.	Public common school enrollment.	Percent of enrollment to total population.	Average length of school term in days.	Schoolhouses.	Square miles to each schoolhouse.	Percent of illiterates.
United States .....	2,953,380	21.31	22,447,392	12,704,487	23.59	136	226,884	13.0	13.3
North Atlantic Division...	168,665	107.37	5,481,205	3,103,266	17.83	168	45,845	3.7	6.2
South Atlantic Division...	282,535	32.98	3,581,513	1,751,225	19.77	100	33,024	8.6	30.9
South Central Division...	588,890	18.94	4,523,731	2,326,258	21.20	95	40,838	13.5	29.7
North Central Division...	765,855	29.68	7,949,333	5,008,577	22.40	147	97,615	7.8	5.7
Western Division.....	1,187,435	2.58	911,610	515,161	17.02	134	9,562	124.2	8.3
North Atlantic Division:									
Maine.....	33,040	22.11	201,851	139,679	21.13	105	4,269	7.8	5.5
New Hampshire.....	9,205	41.81	106,611	59,813	15.89	119	2,075	4.5	6.8
Vermont.....	9,565	36.39	101,457	65,608	19.74	137	2,424	3.9	6.7
Massachusetts.....	8,315	278.48	659,870	371,492	16.59	169	7,239	1.1	6.2
Rhode Island.....	1,250	318.44	105,534	52,774	15.27	188	491	2.5	9.8
Connecticut.....	4,990	154.03	221,245	126,505	16.95	182	1,650	3.0	5.3
New York.....	49,170	125.95	1,836,935	1,042,160	17.38	186	12,072	4.1	5.5
New Jersey.....	7,815	193.82	464,992	234,072	16.20	192	1,663	4.7	6.5
Pennsylvania.....	45,215	116.88	1,791,710	1,011,163	19.23	155	14,022	3.2	6.8
South Atlantic Division:									
Delaware.....	2,050	85.67	57,496	31,434	18.66	166	452	4.5	14.3
Maryland.....	12,210	105.72	370,892	184,251	17.68	184	2,236	5.5	15.7
District of Columbia..	70	3,839.87	74,176	36,906	16.02	179	98	7	13.2
Virginia.....	42,450	41.27	671,779	342,269	20.67	116	6,509	6.5	30.2
West Virginia.....	24,780	30.95	305,669	153,293	25.34	96	5,011	4.9	14.4
North Carolina.....	52,250	35.30	673,465	325,861	20.14	60	5,813	9.0	35.7
South Carolina.....	30,570	38.16	501,393	203,461	17.67	70	3,510	8.7	45.0
Georgia.....	59,475	31.15	771,027	342,562	18.64	83	7,047	8.4	39.8
Florida.....	58,680	7.22	155,676	91,188	23.30	120	2,348	25.0	27.8
South Central Division:									
Kentucky.....	40,400	46.47	727,061	408,966	22.00	100	7,485	5.4	21.6
Tennessee.....	42,050	42.34	720,872	455,732	25.78	96	6,629	6.3	26.6
Alabama.....	52,250	29.26	639,494	302,949	20.02	74	6,495	8.0	41.0
Mississippi.....	46,810	27.83	559,101	334,168	25.91	85	6,071	7.7	40.0
Louisiana.....	48,720	24.63	455,234	124,372	11.12	101	2,501	19.5	35.8
Texas.....	265,780	8.52	924,142	476,421	21.31	116	9,065	29.3	19.7
Arkansas.....	53,850	21.27	476,185	223,071	19.77	75	2,592	20.8	26.6
Oklahoma.....	39,030	1.59	21,642	579	10.85				5.4
North Central Division:									
Ohio.....	41,060	90.10	1,271,031	767,439	21.71	160	12,814	3.2	5.2
Indiana.....	36,350	61.05	785,172	505,516	23.06	130	9,907	3.7	6.3
Illinois.....	56,650	68.33	1,323,030	778,319	20.34	155	12,313	4.6	5.2
Michigan.....	58,915	36.46	703,684	427,032	20.39	154	7,616	7.7	5.9
Wisconsin.....	56,040	30.98	603,846	351,725	20.85	159	6,476	8.7	6.7
Minnesota.....	83,365	16.44	454,804	281,859	21.65	128	6,035	13.8	6.0
Iowa.....	56,025	34.46	701,182	493,267	25.80	156	13,129	4.3	3.6
Missouri.....	69,415	38.98	1,008,935	620,314	23.15	126	9,711	7.1	9.1
North Dakota.....	70,795	2.60	59,324	35,543	19.45	113	1,483	47.7	6.0
South Dakota.....	77,650	4.28	113,900	77,943	23.70	145	3,153	24.6	4.2
Nebraska.....	77,510	13.78	384,255	240,300	22.69	139	5,937	13.1	3.1
Kansas.....	82,080	17.47	540,170	399,322	27.98	128	9,041	9.1	4.0
Western Division:									
Montana.....	146,080	.91	30,240	16,980	12.85	156	385	379.4	5.5
Wyoming.....	97,890	.62	16,291	7,875	12.97	120	223	439.0	3.4
Colorado.....	103,925	3.98	113,150	65,490	15.89	144	1,190	87.3	5.2
New Mexico.....	122,580	1.25	52,543	18,215	11.86	70	452	271.2	44.5
Arizona.....	113,020	.63	18,284	7,969	13.40	126	219	516.1	23.4
Utah.....	84,970	2.53	79,937	36,372	17.49	130	618	137.5	5.6
Nevada.....	110,700	.42	12,391	7,387	16.14	140	151	733.1	12.8
Idaho.....	84,800	1.00	27,257	14,311	16.96	70	315	269.2	5.1
Washington.....	69,180	5.22	97,863	55,432	15.87	102	1,275	54.3	4.3
Oregon.....	96,030	3.32	103,365	63,354	20.19	118	1,613	59.5	4.1
California.....	158,360	7.75	360,289	221,756	18.36	153	3,121	50.7	7.7



TABLE 20.—*Showing percentage of illiteracy in the countries of Europe.*

Group.	Countries (or States).	Per-centage.	Date.	Category of population.	How found.	Sources of information.
Teutonic nations.	German Empire.....	<i>Per ct.</i> .24	1894	Male.....	Army recruits..	Imperial bureau of statistics, Berlin.
	Prussia.....	.37	1894	.....do.....	.....do.....	Do.
	Bavaria.....	.03	1894	.....do.....	.....do.....	Do.
	Saxony.....	.04	1894	.....do.....	.....do.....	Do.
	Württemberg.....	.01	1894	.....do.....	.....do.....	Do.
	Baden.....	.03	1894	.....do.....	.....do.....	Do.
	Hesse.....	.04	1894	.....do.....	.....do.....	Do.
	Mecklenburg-Schwerin.....	.12	1894	.....do.....	.....do.....	Do.
	Saxe-Weimar.....	.00	1894	.....do.....	.....do.....	Do.
	Mecklenburg-Strelitz.....	.00	1894	.....do.....	.....do.....	Do.
	Oldenburg.....	.00	1894	.....do.....	.....do.....	Do.
	Brunswick.....	.00	1894	.....do.....	.....do.....	Do.
	Saxe-Meiningen..	.03	1894	.....do.....	.....do.....	Do.
	Saxe-Altenburg..	.12	1894	.....do.....	.....do.....	Do.
	Saxe-Coburg-Gotha.....	.00	1894	.....do.....	.....do.....	Do.
	Anhalt.....	.00	1894	.....do.....	.....do.....	Do.
	Schwarzburg-Sondershausen.....	.00	1894	.....do.....	.....do.....	Do.
	Schwarzburg-Rudolstadt.....	.00	1894	.....do.....	.....do.....	Do.
	Waldeck.....	.00	1894	.....do.....	.....do.....	Do.
	Reuss, senior line.....	.00	1894	.....do.....	.....do.....	Do.
	Reuss, junior line.....	.18	1894	.....do.....	.....do.....	Do.
	Schumburg-Lippe.....	.00	1894	.....do.....	.....do.....	Do.
	Lippe.....	.00	1894	.....do.....	.....do.....	Do.
	Lubeck.....	.00	1894	.....do.....	.....do.....	Do.
	Bremen.....	.13	1894	.....do.....	.....do.....	Do.
	Hamburg.....	.00	1894	.....do.....	.....do.....	Do.
	Alsace-Lorraine.....	.14	1894	.....do.....	.....do.....	Do.
	Sweden and Norway..	.12	1890	.....do.....	.....do.....	Hübner's Annual Tables.
	Denmark.....	.54	1891	.....do.....	.....do.....	Do.
	Finland.....	1.62	1892	Male and female over 10 years.	Census.....	Do.
Mixed Teutonic.	Switzerland.....	2.10	1890	Male.....	Army recruits..	Schweizerische Lehrerzeitung.
	Scotland.....	5.17	1891	Male and female.	Signing marriage certificates.	Statesman's Year-book.
	Netherlands.....	6.50	1891	Male.....	Army recruits..	Hübner's Annual Tables.
	England.....	7.00	1891	Male and female.	Signing marriage certificates.	Statesman's Year-book.
Romanic, Teutonic, Magyaric mixture.	France.....	7.40	1891	Male.....	Army recruits..	Levasseur's Statistique.
	Belgium.....	14.80	1892	.....do.....	.....do.....	Hübner's Annual Tables.
	Austria.....	15.40	1892	.....do.....	.....do.....	Army Returns.
	Ireland.....	19.40	1891	Male and female.	Signing marriage certificates.	Statesman's Year-book.
	Hungary.....	31.50	1892	Male.....	Army recruits..	Army Returns.
	Italy.....	40.30	1885	.....do.....	.....do.....	Hübner's Annual Tables.
	Portugal.....	62.60	1878	Male and female.	Census.....	Mischler's Summaries.
	Spain.....	62.66	1877	Male.....	.....do.....	Do.
Slavic nations.	Russia.....	70.80	1882	.....do.....	Army recruits..	Hübner's Annual Tables.
	Servia.....	79.31	1882	.....do.....	.....do.....	Do.
	Roumania.....	79.60	1882	.....do.....	.....do.....	Mischler's Summaries.

New Mexico occupies the sixth place, credited with 31.5 per cent of decrease. New York holds the thirty-seventh place in the list and is marked 0, for the reason that the rates in 1880 and 1890 were the same. It is true that New Mexico had greater room for improvement than New York, the percentage of illiteracy for the former standing at 65 in 1880, which was reduced to 44.5 in 1890, while New York's rate was only 5.5 at the two periods indicated. While it is undoubtedly true that New York was performing immeasurably greater work for higher and secondary education and better work in elementary education perhaps, New Mexico deserves the credit of having accomplished relatively more in the foundation work. While New Mexico stood at the very bottom of the list in literacy in 1880 and was only two places removed from that unenviable distinction in 1890, that Territory must have the credit of having made a wider gap between her two positions than any other State or Territory.

The 9 States and 1 Territory standing at the foot of the list, marked + in Diagram 5, actually retrograded, as has already been shown. While several of these States undoubtedly made great progress in secondary and higher education, and in most cases improved their systems of elementary education, the fact remains that the rates of illiteracy in these Commonwealths were higher in 1890 than ten years before. An examination of the second column of Table 13, in which the States have been graded according to the progress made by the native white population alone, will reveal the fact that the retrogression of several States was due to the influx of an illiterate foreign element. This cause will be noticed latter on.

Table 14 indicates the rank of each State in literacy in 1890, 1880, and 1870, the States having the smaller per cents of illiterate population standing at the heads of the lists. It may be interesting to note how States changed places in the twenty years. Thus in 1870 Wyoming held the sixteenth place in 1880 it appeared at the top, while in 1890 it occupied the second place. In 1870 New Hampshire was the second State, in 1880 the sixth, and in 1890 the twenty-sixth.

Table 15 ranks the States with reference to the illiteracy of the native white population, Table 16 with reference to the foreign white, Table 17 to the total white, and Table 18 with reference to the illiteracy of the colored population. These tables not only show the rank of each State, but also the per cent of illiterates in each.

Table 2 gives the male population 10 years of age and over, the number of illiterate males, and the per cent of illiterate males to the male population 10 years of age and over for each of the States and Territories for 1890, 1880, and 1870. A comparison of the percentages will show that the rate fell from 15.8 in 1880 to 12.4 in 1890, both rates being lower than the per cents of illiteracy to the male and female population combined. In the North Atlantic Division the rate of illiteracy to the male population increased from 5.4 per cent to 5.9. In all

the other divisions there was decrease in the rate, and in the South this decrease was very marked, being even greater than the general decrease of illiteracy in that section. The increase in the North Atlantic States was probably due to the increase in the proportion of illiterate foreign-born males, while the decrease in the South can be attributed in part to the fact that among the blacks more males than females learned to read and write. A comparison of Table 2 with the succeeding table will further emphasize the fact that the decrease in the relative number of illiterates was greater among the males than among the females.

Fourteen States and one Territory show increase in the per cent of illiterates among males, all in the North Atlantic, North Central, and Western divisions. In addition to the 9 States and 1 Territory already mentioned as having increased their rates of illiteracy to the general population, the States of Connecticut, New York, Pennsylvania, Wyoming, and California show increase in their rates of illiteracy to the male population. The rate of illiteracy for males in Massachusetts stood at the same figure in 1890 and 1880. Rhode Island was the only State in the North Atlantic Division which decreased the rate of illiteracy among the males between 1880 and 1890, the rate in 1880 being 9.8 and 9 in 1890. In column 2 of Table 12 are shown the differences between the 1880 and 1890 rates of illiteracy to the male population for each of the States. Those marked + show actual increase in their per cents of illiteracy, and those marked — showing decrease.

An examination of Table 3 and the third column of Table 12 will show that, with one exception, all the States in which there was a decrease in illiteracy compared to the general population there was also decrease in the rates of illiteracy to the female population. The single exception is the State of Minnesota, in which the general rate of illiteracy was somewhat smaller, while the per cent to the female population remains the same. New York, which made no change in the general rate between 1880 and 1890, shows an increase in the rate of illiteracy of the male population and a corresponding decrease in the percentage to the female population.

By a comparison between the second and third columns of Table 12 it will be seen that in the North Atlantic Division there was a small increase in the rate of illiteracy to the male population and a corresponding decrease in the per cent to the female population. In the South Atlantic and South Central divisions the decrease in illiteracy among the males was considerably greater than the decrease of the rate among the females, as already noted. In the North Central Division the improvement is somewhat greater in the male population, while in the Western Division the difference is decidedly in favor of the female population. The decrease of illiteracy for the male population in that division was from 10.1 to 8.1, while the decrease for the female population was from 13.6 to 8.7. For the whole country the rate of



improvement was in favor of the female population by a small fraction of 1 per cent.

A comparison of Tables 2 and 3, or more conveniently columns 3 and 5 of Table 11, will show the relative rates of illiteracy to the male and female population 10 years of age and over. For the year 1890 the per cent of illiterates to the male population was 12.4, and to the female population 14.4. In the North Atlantic Division the rates were, for males 5.9, for females 6.5; South Atlantic, males 29.1, females 32.6; South Central, males 27.6, females 31.9; North Central, males 5.2, females 6.3; Western Division, males 8.1, females 8.7.

Table 4 presents the illiteracy statistics of the native white population in 1890, 1880, and 1870. It is most gratifying to trace the steady progress made by the native white race through the two decades. In 1870 the per cent of illiterates to the native white population 10 years of age and over was 10.8, and in 1880 it was 8.7. In that decade there had been improvement in each of the five divisions of the country. In the North Atlantic Division the per cent of illiterates had fallen from 3.2 to 2.8; in the South Atlantic from 24.2 to 20; in the South Central from 24 to 22; in the North Central from 7.6 to 5, and in the Western Division from 16 to 8.6.

In the ten years from 1880 to 1890 the advancement of the native white population was even greater. The number of illiterates had decreased from 2,255,400 in 1880 to 2,065,003 in 1890, notwithstanding the increase of 24.5 per cent in the number of the native whites. The per cent of illiteracy had fallen from 8.7 in a population of 25,785,789 to 6.2 in native white population of 33,144,187, ten years of age and over. In each of the five divisions there had also been an actual decrease in the number of native white illiterates, as well as in the rates. In the North Atlantic the rate was reduced from 2.8 to 2.3, in the South Atlantic from 20 to 14.6, in the South Central from 22 to 15, in the North Central from 5 to 3.4, and in the Western Division from 8.6 to 4.5. In a greater number of States the actual number of native white illiterates had decreased from 1880 to 1890.

In 8 of the States—Maine, New Hampshire, Vermont, Massachusetts, Louisiana, Michigan, Wisconsin, and Montana—there was a slight increase in the per cent of native white illiterates, but in no case did this increase exceed the fraction of 1 per cent. The fifth column of Table 12 will show the differences between the rates in 1890 and 1880 for each State, those marked + having increased their rates as indicated. Columns 9 and 10 of Table 11 give a comparison of the rates for the two years. The second column of Table 13 gives the percentage of decrease or increase in the rates of illiteracy in each State, showing the relative progress of the native whites in each State during the decade.

The native white population of the United States increased about 24.5 per cent from 1880 to 1890, the colored population about 13 per

cent, while the foreign-born white population increased more than 39 per cent. In other words, in 1880, the colored population comprised 13.5 per cent of the whole, while in 1890 it was only 12.2 per cent. In 1880 the foreign-born white population was 13.1 per cent of the whole, but in 1890 the per cent had risen to 14.6. During the decade immigration was increasing our foreign population more rapidly than the birth-rate could increase our native population.

Table 8 gives the total population for 1890 by States and Territories, and also the native white, foreign white, and colored population, and the per cent of each to the total. Tables 9 and 10 give the like statistics for 1880 and 1870. A study of these tables will prove interesting in connection with the examination of the statistics of illiteracy among the three elements of our population.

In the first place, it will be noted that the foreign-born whites numbered 9,121,867, or 14.6 per cent of the entire population in 1890, an increase from 6,559,679 in 1880, when the per cent to the whole population was less than 13.1. In the North Atlantic Division in 1890 there were 3,874,866 foreigners, or 22.3 per cent of the population of that section. In 1880 the per cent was only 19.4. In the North Central Division in 1890 there were 4,053,457 foreigners, or 18.1 per cent of the population of that section. In 1880 the per cent was only 16.8. In the Western Division the foreign-born whites numbered 672,649, or 22.2 per cent. Although this was a very large increase from 397,019, the number of foreign whites in that division in 1880, the per cent to the total remained about the same.

In the South Atlantic Division in 1890 the foreign-born whites numbered only 202,316, the per cent to the total population being only 2.3, or about the same as in 1890. In the South Central Division the percentage of foreigners fell from 3 in 1880 to 2.9 in 1890, when the number was only 318,579.

The ninth column of Table 12 will show in which States the per cent of foreign population increased or decreased between 1880 and 1890. The tenth column indicates the same for the colored population, and the eighth column shows where there was increase or decrease in the per cent of native white population. The figures marked + indicate increase in the percentages, and those marked — show where there has been decrease in the per cents. These figures are the differences between the rates in corresponding columns of Tables 8 and 9, and are used only to more plainly mark the States in which the three elements of population have made gains or losses in their ratio to the whole population of a State.

Table 5 shows what was the foreign-born white population in 1890, 10 years of age and over, the number who could not read and write, and the per cent of illiterates to this foreign population. The corresponding figures are given for 1880 and for 1870 on the same page. The for-

foreign-born population 10 years of age and over in 1890 was 8,786,887, and of this number 1,147,571 were illiterates. The number of illiterates had increased from 763,620 in 1880, or from 12 per cent to 13.1. In each of the five divisions of the country the increase in the per cent of illiteracy of the foreign white population is marked. This increase is maintained in all the States save 9. In New Hampshire, Vermont, Rhode Island, Connecticut, Delaware, Maryland, New Mexico, and Utah there was more or less decrease in the rate of illiteracy among the foreign-born whites.

More than three-fourths of the illiterate foreigners of the North Atlantic Division are in the States of Massachusetts, New York, and Pennsylvania. In the South Atlantic more than half the foreign illiterates are in Maryland, and in the South Central Division more than two-thirds of them are in Texas, and a large portion of the remainder will be found in Louisiana. In the North Central Division they are more evenly distributed, though Illinois has more than any other State. In the Western Division nearly one-half the illiterate foreigners are in California. In the States mentioned are the large cities of Boston, New York, Philadelphia, Baltimore, New Orleans, Chicago, and San Francisco. Of the foreign illiterates in the South Central Division nearly 9,000 are in Louisiana, or New Orleans, and over 42,000 in Texas. Most of the latter are Mexicans. The presence of Mexicans in New Mexico and Arizona raises the per cent of illiterates to the foreign white population to 30 and 42, respectively, which are higher than the rates for the foreign whites in any other part of the country.

It is important to note that of the native white population 72.3 per cent is 10 years of age and over, while 96.3 per cent of the foreign-born white population exceeds that age. Of the colored population 71.8 per cent is 10 years of age and over. Of the foreign illiterates a much larger proportion is beyond the reach of schools than of the native illiterates.

In Table 11, columns 11 and 12, will be found a comparison of the rates of illiteracy for the foreign-born white population for 1890 and 1880. In Table 12, column 6, will be seen the differences between the 1880 and 1890 rates for each State and Territory, only the 7 marked — showing decrease in the percentage.

Diagram 3 is a graphic illustration of the relative number of illiterates in the three classes of population.

To what extent does the presence of foreign-born illiterates increase the rate of illiteracy to the whole population of the United States? The influence of this foreign element may be inferred from the facts made prominent in the table below. The third column shows the per cent of illiterates to the native white population 10 years of age and over in 1890 for the whole country and for each division. The fourth column gives the per cent of illiterates to the foreign white population,



while the fifth shows the rate for the two combined, or for the entire white population.

	Total.	Native white.	Foreign white.	Total white.	Colored.
United States .....	13.3	6.2	13.1	7.7	56.8
North Atlantic Division .....	6.2	2.3	15.6	5.9	21.7
South Atlantic Division .....	30.9	14.6	12.2	14.5	60.1
South Central Division .....	29.7	13.0	20.2	15.3	61.2
North Central Division .....	5.7	3.4	10.0	5.1	32.8
Western Division .....	8.3	4.5	10.4	6.2	41.5

The per cent of illiteracy for the native white population is 6.2. This represents 2,065,003 native-born whites who can not read and write. The per cent of illiteracy to the foreign-born white population is 13.1, representing 1,147,571 foreign-born whites who can not read and write. The addition of this foreign element raises the rate of illiteracy for the total white population 10 years of age and over to 7.7 for the whole country.

A comparison of columns 3, 4, and 5 in the above table will reveal the extent of this influence in the several sections. The influence is greatest in the North Atlantic Division, where it changes a native white illiteracy of 2.3 per cent to a combined white illiteracy of 5.9 per cent. Nearly two-thirds of the white illiterates in that division are foreigners. In the North Central Division, where nearly one-half of the white illiterates are foreigners, the 3.4 per cent of native white illiteracy is raised to 5.1 for the combined white population. In the Western Division less than half the white illiterates are foreigners, but their presence increases the rate from 4.5 for the native whites to 6.2 for the combined white population. In the two Southern divisions the number of foreigners is so small that their presence has but little influence in raising or lowering the general rate of illiteracy.

What is the effect of the great mass of colored illiterates in the Southern States upon the per cent of illiteracy to the combined population of the three elements? Compare columns 2, 5, and 6, in the foregoing table. Of the 6,324,702 illiterates in the United States 3,112,128, or nearly one-half, are colored. This element, constituting 56.8 per cent of the colored population 10 years of age and over, raises the per cent of illiteracy from 7.7 for the white population to 13.3 for the whole population of the country. This influence is, of course, most strongly felt in the two Southern divisions, where the rate of illiteracy for the entire population is double that for the white population alone. This is easily understood when it is noted that more than 30 per cent of the population of the two Southern divisions is colored, and that the rate of illiteracy to the colored population is over 60 per cent in the South. But the presence of colored illiterates is also felt in other divisions. In the North Atlantic the illiteracy of the small colored population raises the rate of 5.9 for the white population to 6.2 for the whole. In the North Central the rate is raised from 5.1 to 5.7 and in the Western Division

from 6.2 to 8.3 by reason of the presence of colored illiterates. A more careful study of the comparative rates as shown in Tables 11 and 12 will give an idea of the influence of an illiterate colored population in each State in raising the general rate of illiteracy.

Before examining in detail the illiteracy statistics of the colored population it may be well to combine the other two elements of our population so that the statistics of the whites and blacks may be studied in contrast or by comparison.

Table 6 gives the total white population 10 years of age and over for the whole country for each State and section in 1890, 1880, and 1870, the number of illiterates, and the percentage of illiteracy. This table includes the native whites and foreign whites, and excludes the negroes, Chinese, Japanese, and Indians.

The relative standing of the white population in regard to illiteracy for the years 1890 and 1880 will be shown by a glance at columns 7 and 8 of Table 11. The rate of illiteracy for each of the three years is given for each State and Territory. Column 4 of Table 12 will show which States have made gains and which losses in their rates of illiteracy to the white population from 1880 to 1890. In 1880 the rate of illiteracy among the whites was 9.4, and in 1890 it had fallen to 7.7. In the North Atlantic Division the rate stood the same for both years, 5.9. In the South Atlantic the difference between the rates in 1880 and 1890 was 5; in the South Central, 6.3; in the North Central, 0.8; and in the Western Division, 2.6. The difference between the rates for the entire country was 1.7. In the column relating to the total whites the 14 States and Territories marked + show increase in the per cents of illiterates to the white population, and all the others marked — show, decrease in the rates of illiteracy.

Table 7 presents the illiteracy statistics of the colored population of the United States from 1870 to 1890. In 1890 the colored population of the country 10 years of age and over was 5,482,485. Of this number 3,112,128, or 56.8 per cent, could not read and write. Although the colored people composed less than one-eighth the entire population, nearly one-half the illiterates of the country were colored. In the North Atlantic Division, where there is but a small negro population, only 229,858 ten years of age and over in the 9 States, the percentage of illiterates is smallest, or only 21.7. In the North Central Division the colored rate of illiteracy is 32.8. In the Western Division the percentage of illiteracy to the colored population is 41.5. It should be remarked that the 60,029 colored illiterates in that division are nearly all Chinese Japanese, and Indians.

In the South Atlantic Division the per cent of illiterates to the colored population is 60.1, and in the South Central Division the rate is 61.2. In these two Southern divisions there are 4,759,040 blacks 10 years of age and over, of whom 2,887,776 can not read and write. The State in that section having the highest rate of illiteracy is Louisiana,

with 72.1 per cent, and that with the lowest is West Virginia, with 44.4 per cent. In the District of Columbia, which belongs to the South Atlantic Division, the per cent is 35. On account of its geographical position Missouri has not been included with either of the two Southern divisions. That State has 47,562 colored illiterates, comprising 41.7 per cent of its colored population 10 years of age and above. A study of the first three columns of Table 7 and a glance at the chart in the first part of this chapter will show how the dark cloud of illiteracy overshadows the Southern part of the country. In this section, including all the former slave States save one, more than 60 per cent of the blacks are illiterates.

Dark as this picture may appear now, it was darker in 1880, and still darker in 1870. In 1880, of a colored population of 4,601,207 ten years of age and over, there were 3,220,878, or 70 per cent, who could not read and write. In 1870, of a colored population of 3,511,075 above the 10-year age, there were 2,806,223 illiterates, or 79.9 per cent. There was marked progress from 1870 to 1880, but from 1880 to 1890 the improvement was wonderful. Not only was the number of illiterates decreased from 3,220,878 to 3,112,128 in the face of a 13 per cent increase in the total colored population, but the rate of illiteracy fell from 70 in 1880 to 56.8 in 1890. In the South Atlantic Division the rate was reduced from 75.1 in 1880 to 60.1 in 1890, and in the South Central it was reduced from 76 in 1880 to 61.2 in the same period. In the North Atlantic Division the rate was only decreased from 24.2 to 21.7. It is a fact that in Maine, New Hampshire, Vermont, and Massachusetts, where the proportion of colored people is very small, there was actual increase in the per cent of colored illiteracy. This will be seen by a glance at the top of column 7 of Table 12 and a comparison of the rates in Table 11. In Michigan and North Dakota increase is shown in the rate of illiteracy among the colored population. In the Western Division there was a pronounced increase in the illiteracy of this class. This is shown in all the States and Territories of that division excepting New Mexico, Utah, and Oregon. As before explained, this retrogression is due to the presence of illiterate Chinese and Indians.

In the last column of Table 13 will be found for each State and Territory and division the per cent of decrease or increase in the percentage of illiterates between 1880 and 1890. For the whole United States the rate of illiteracy to the colored population in 1880 was 70; in 1890 it was 56.8. There was thus a decrease of 13.9 per cent in the percentage in the ten years. This figure (13.9) represents the rate of progress made by the blacks between 1880 and 1890 in overcoming their mass of illiterates.

In like manner it will be clear that 10.3 per cent is a mark of the progress made by the colored people in the North Atlantic Division, 20 per cent in the South Atlantic, 19.5 in the South Central, and 20.4 in the North Central divisions in overcoming their percentages of illiteracy. The Western Division shows a retrogression of 25 per cent.



In the Southern divisions the greatest relative progress made by the blacks was in Texas, where the decrease between the rates in 1880 and 1890 was 30.4 per cent. The Southern State standing next in the list is Arkansas, with a per cent of 28.5. Florida stands next, with 28.4 per cent. Louisiana stands at the bottom of the list in the South, having reduced the former percentage of colored illiteracy only 8.8 per cent.

In this connection an examination of columns 13 and 14 of Table 11 and column 7 of Table 12 may prove interesting to those who care to make further comparisons of the progress of the blacks in the several States between 1880 and 1890.

Table 18 shows the rank of each State in 1890, 1880, and 1870 with reference to the illiteracy of its colored population. The State standing at the head of each column had the smallest per cent of illiteracy to its colored population in the year indicated. Nevada held the first place in 1870, the eleventh place in 1880, and the forty-second place in 1890. An inspection of the table will reveal the changes of position made by other States.

The table which follows shows in parallel columns the rank of sixteen Southern States and the District of Columbia with reference to the rates of illiteracy to the colored population in each in 1890, 1880, and 1870. The table not only indicates the rank of each State, but the per cent of colored illiterates in each is given for the three census years. In 1870 Texas occupied the fifteenth place, with a percentage of 88.7. In 1880 that State was twelfth in the list, with a percentage of 75.4, and in 1890 it had reached the seventh place and had reduced the rate to 52.5.

Rank.	1890.		1880.		1870.	
	States, etc.	Per cent.	States, etc.	Per cent.	States, etc.	Per cent.
1	District of Columbia...	35.0	District of Columbia...	48.4	Maryland.....	69.5
2	Missouri.....	41.7	Missouri.....	53.9	District of Columbia..	70.5
3	West Virginia.....	44.4	West Virginia.....	55.0	Delaware.....	71.3
4	Delaware.....	49.5	Delaware.....	57.5	Missouri.....	72.7
5	Maryland.....	50.1	Maryland.....	59.6	West Virginia.....	77.4
6	Florida.....	50.6	Kentucky.....	70.4	South Carolina.....	81.1
7	Texas.....	52.5	Florida.....	70.7	Arkansas.....	81.2
8	Virginia.....	52.7	Tennessee.....	71.7	Tennessee.....	82.4
9	Arkansas.....	53.6	Virginia.....	73.2	Kentucky.....	83.8
10	Tennessee.....	54.2	Arkansas.....	75.0	Florida.....	84.1
11	Kentucky.....	55.9	Mississippi.....	75.2	North Carolina.....	84.8
12	North Carolina.....	60.1	Texas.....	75.4	Louisiana.....	85.9
13	Mississippi.....	60.9	North Carolina.....	77.4	Mississippi.....	87.0
14	South Carolina.....	64.1	South Carolina.....	78.5	Alabama.....	88.1
15	Georgia.....	67.3	Louisiana.....	79.1	Texas.....	88.7
16	Alabama.....	69.1	Alabama.....	80.6	Virginia.....	83.9
17	Louisiana.....	72.1	Georgia.....	81.6	Georgia.....	92.1

Whether the remarkable progress made by the blacks of the South in the last twenty years is due more to the aid of the whites who pay the school taxes than to the efforts of the negroes themselves is not a question for discussion here. It would be more important to know how

far above mere reading and writing their education extends and what use they are making of their newly acquired knowledge. Future inquiries of the Bureau of Education will from year to year bring out information on these questions.

The rate of illiteracy is greater among the colored females of the South than among the colored males. In many of the larger towns and cities large numbers of blacks of the voting age attend night schools to prepare themselves for the exercise of one of the privileges of citizenship. Recent ballot laws which make it necessary that the voter should be able to read and mark his own ticket are undoubtedly acting as an educational stimulant to the colored men. At least a surmise as to the extent of the influence of this force in elementary education may be gained from an examination of the colored illiteracy statistics, in which are shown separately the number of male and female illiterates, and the number of each between certain ages.

It is claimed that much of the decrease in the rate of illiteracy among the blacks is due to the fact that the old illiterate ex-slaves are rapidly dying off and that the per cent of decrease in the number of illiterates somewhat exaggerates the real progress made by the race. To what extent this is true may be inferred from a comparison of the rates of illiteracy to the adult population for the three census years. But the figures can not rob the blacks of the credit of having made steady and certain progress in the last two decades.

Table 19 is a table of miscellaneous statistics which may have some relation to the statistics of illiteracy. The table gives for each State the area, population per square mile, number of persons of school age in 1890, the public common-school enrollment, per cent of enrollment to population, the average length of school term, the number of schoolhouses, number of square miles to each schoolhouse, and the per cent of illiterates. The curious may find instruction in tracing the supposed relation of enrollment, number of schoolhouses, or length of school term to the per cent of illiteracy.

This chapter may be appropriately concluded with a reference to the illiteracy statistics of other countries. Table 20, compiled by Dr. L. R. Klemm, shows the percentages of illiteracy in the countries of Europe. In Germany the per cent of illiteracy to the male population, taking the census of army recruits, is 0.24, or less than one-quarter of 1 per cent. In Sweden and Norway the rate is 0.12, and in Denmark 0.54, as found from a like source. In Finland, according to a census of 1892, the per cent of illiterates to the male and female population 10 years of age and over was 1.62. From various sources the rates for other countries are given as follows:

	Per cent.
Switzerland.....	2.10
Scotland.....	5.15
Netherlands .....	6.50
England .....	7.00

	Per cent.
France.....	7.40
Belgium.....	14.80
Austria.....	15.40
Ireland.....	19.40
Hungary.....	31.53
Italy.....	40.30
Portugal.....	62.60
Spain.....	62.66
Russia.....	70.80
Servia.....	79.31
Roumania.....	79.60

These rates of illiteracy will be compared by the reader with 13.3, the per cent of illiterates in the United States to the total population 10 years of age and over.





## CHAPTER III.

### SYSTEM OF PUBLIC EDUCATION IN BELGIUM.<sup>1</sup>

#### SOURCES OF INFORMATION.

1. *Official reports of the Minister of the Interior and of Public Instruction, i. e., Rapports Triennaux sur la situation de l'enseignement supérieur, 1886-1887-1888; 1889-1890-1891. De l'enseignement moyen, 1885-1886-1887; 1888-1889-1890. De l'enseignement primaire, 1885-1886-1887; 1888-1889-1890.*
2. *Laws relative to public instruction.*
3. *Annuaire statistique de la Belgique, 1891.*
4. *Recensement général du 31 décembre 1890.*
5. *Bulletins du Ministère de l'instruction publique.*
6. *Recueil des lois et arrêtés relatifs à l'enseignement supérieur, Ministère de l'instruction publique.*
7. *L'enseignement public en Belgique, par Émile Greyson.*
8. *L'enseignement spécial en Belgique, par H. Bertiaux.*
9. *Code administratif de l'enseignement primaire, lois et règlements, par A. Stasse.*
10. *Files of the Revue Pédagogique Belge.*
11. *Files of the Revue Universitaire.*

#### TOPICAL OUTLINE.

*Political organization of the Kingdom—System of public instruction: General view; summarized statistics—Elementary instruction: Historic antecedents; initial measures; law of 1812 organizing primary instruction; law of 1879; reactionary measures, 1884—Statistics, 1890: School attendance; duration of school period; programmes maintained; the teaching force: Number, salaries, conferences, pensions—Normal schools—Inspectors: Classification, salaries, services—Finances—Effects of changing policies—Auxiliary agencies.*

*Intermediate instruction: Classification of State schools, number of schools, and enrollment in the same; support and control—Teachers: Classification and salaries—Communal schools—Examination and diplomas—Clerical schools—Special courses for professors—Curricula and programmes—Finances—Superior instruction: The universities—Origin and constitution of State universities; professors; officers of administration; students; fees; lessons and courses; scholarships and prizes; number and distribution of students 1890-91; buildings and equipments; income and expenditures—Degree conferring authorities; orders of degrees and conditions for obtaining; admission of women to degrees—Academies of science and literature—Libraries—University extension—Technical and industrial schools: Establishment, classification, and general characteristics—Typical exhibits at the Antwerp Exposition—Official statistics.*

**APPENDIX:** (A) *Citation from "L'Instruction du Peuple," by Emile de Laveleye.* (B) *Obligatory programme of primary studies and official directions relative thereto—Law of 1879.* (C) *Law of September 20, 1884, relative to primary instruction.*

#### POLITICAL ORGANIZATION OF THE KINGDOM.

Belgium, constitutional monarchy; the executive and legislative powers vested in hereditary king, Senate and Chamber of Representatives; senators of two classes—

<sup>1</sup> Prepared by A. Tolman Smith.

first class, in number equal to half the number of representatives, elected directly by the voters; second class, elected by provincial councils, their number being proportioned to the population of the respective provinces. Representatives elected directly by the voters, number proportioned to the population, but may not exceed 1 for every 40,000 inhabitants.

Every citizen over 25 years of age, domiciled for not less than one year in the same commune and not legally disqualified, has a vote. (Law of September 7, 1893.)

A supplementary vote is allowed to every citizen over 35 years of age, married or widower, with legitimate issue and paying at least 5 francs (\$1) a year in house tax; also to every citizen over 25 years of age owning real estate to the value of 2,000 francs (\$400) or having a corresponding income from such property, or who for two years has derived at least 100 francs a year from Belgian funds either directly or through the savings bank.

Two supplementary votes are given to citizens over 25 years of age who have received a diploma or certificate of higher instruction or who fill or have filled office or engaged in private professional practice, implying at least average higher instruction. (Statesman's Year Book, 1894, pp. 376, 377.)

Under the law of September 7, 1893, amending the constitution, the number of electors is raised to 1,200,000 as against 135,000 under the former conditions (Constitution 1831, and law of March 17, 1848), which allowed the franchise only to male citizens paying a direct annual tax of at least 42.32 francs (\$8.40).

The divisions of the Kingdom for local government are provinces (9) and communes (2,596, census of 1890), both of which enjoy a large measure of autonomy. The affairs of the former are administered by a governor appointed by the King, a provincial council (elected), and a permanent deputation, consisting of the governor and six members of the council chosen by that body.

Three distinct authorities participate also in the administration of the commune: an elected council, a burgomaster appointed by the King from the members of the council, and a body of aldermen (*collège échevinal*), consisting of the burgomaster and from 2 to 5 members of the council chosen by that body. The council, which represents the people directly, is the principal source of authority in communal affairs (Law regulating provincial and communal organization, March 30, 1836, and modifying laws, 1838, 1842, 1848, 1860, 1865; also *Les ministres dans les principaux pays d'Europe et d'Amérique*, par L. Dupriez, tome 1, pp. 262-266).

The provinces are also divided into *arrondissements* and these again into *cantons*. These divisions are intended to facilitate the control of the central authority, and are not strictly speaking divisions for local government.

In three provinces lying along the border of France, i. e., Hainault, Luxembourg, and Namur, and also in Liège, a central province, French or Walloon is the prevailing language. In Antwerp, Brabant, East and West Flanders, and Limbourg, the Flemish or Dutch.

The population of Belgium, as shown by the census of 1890, was 6,069,321, comprised in an area of 11,373 square miles. Further analysis gives 2,894,694 as the population of communes of 5,000 inhabitants or more, and 3,174,627 for communes of less than 5,000 inhabitants.

The census by sex gives men 3,026,954; women, 3,042,367. It appears, moreover, that about 36 per cent of the males (1,079,035) and 40 per cent of the females (1,204,647), or 38 per cent of the entire population, are unable to read and write. In 1866 illiterates formed 53 per cent and in 1880 42 per cent of the entire population.

Belgium is preeminently a Catholic country. Protestants number only about 10,000 and Jews 4,000. The census of 1890 gives 30,098—men 4,775, women 25,323—members of religious orders in the Kingdom, of whom 24,585 are native Belgians.

The executive affairs of the Government are administered through seven departments. The educational interests are intrusted to the minister of the interior and of public instruction.<sup>1</sup>

<sup>1</sup> The present incumbent is M. J. de Burlet.



## SYSTEM OF PUBLIC EDUCATION.

*General view.*—The educational system of Belgium, like that of France, preserves many features of the Imperial University, established by Napoleon.<sup>1</sup> In Belgium, however, there is the form without the spirit of centralization, local freedom, especially in the department of elementary education, being the ruling principle.

All grades of instruction receive State support, and all institutions sharing in the public funds are subject in some measure to State inspection. Schools, colleges, and universities are maintained by public and private, central and local agencies.

The central administration, like the ministry of public instruction in France, is organized in three departments, corresponding to the three commonly recognized grades of instruction, i. e., primary, secondary, and superior. The chief educational officials under the minister of the interior and of public instruction, are two general directors, one for primary instruction, the other for secondary and superior.

The minister also maintains a supervision over secondary and primary instruction, as in France, by the agency of inspectors, i. e., for secondary instruction (*enseignement moyen*), one general inspector and two ordinary inspectors, one for the humanities, the other for mathematics and the sciences; and for primary instruction one or more principal inspectors in each of the nine provinces of the Kingdom, and subordinate cantonal inspectors.

The Belgian State universities, like the French Facultés, are not only teaching bodies, but constitute also part of the machinery for the public administration of superior instruction. In the Belgian system there is nothing exactly corresponding to the superior council of public instruction or to the academic and departmental councils which are important features of the French organization. These are suggested, however, by the deliberative councils (*conseils de perfectionnement*), one for each of the three departments of the Belgian system. These councils, which are formed by appointment from the official and professional bodies, deliberate upon scholastic affairs submitted to them by the minister, but have not the judicial functions of the French councils.

In Belgium, as in France, the appointment of professors for the public secondary and superior institutions and the regulations of their programmes are prerogatives of the central authority, while the appointment of primary teachers rests with local authorities.

A further resemblance to the French organization is noticeable in the union of State, provincial, and communal agencies and resources for the direction and maintenance of education. But with these external features, the resemblance ends; in spirit the two systems are radically different; in the Republic there is a high degree of centralization, in the Kingdom everything tends to decentralization. In both countries

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<sup>1</sup> From 1794 to 1814 Belgium was under French rule.

the three orders of education have their distinct origin and history, and although now coordinated into organic systems are still managed as separate departments of those systems.

## STATISTICS, 1890.

The following table shows the status of schools and universities in Belgium with respect to enrollment and teaching force and the expenditure for public education, according to the latest official report, which covers the triennial period 1887-1890:

	Pupils or students.			Teachers or professors.			Current expenditure.		
	Male.	Female.	Total.	Male.	Female.	Total.	From private funds. <sup>a</sup>	From public funds.	Total.
Infant schools (Écoles gardiennes) [ages 3 to 6 years]:									
State intermediate (Écoles moyennes)—									
Public .....			68,718		1,292	1,292			
Subsidized private .....			44,454		660	660			
Total .....			113,172		1,952	1,950	\$13,918	\$399,095	\$413,013
Primary schools [ages 6 to 14 years]:									
Public .....	266,502	174,144	440,646	5,438	3,153	8,591			
Subsidized private .....	68,537	106,858	175,395	1,189	2,015	3,204			
Total .....	335,039	281,002	616,041	6,627	5,168	11,795	153,533	3,717,344	63,870,877
Primary normal schools:									
State schools and sections .....	345	366	711				132,670	254,366	387,036
Private .....	720	1,085	1,805						
Total .....	1,065	1,451	2,516						
Schools for adults:									
Public .....	48,362	13,797	62,159	2,076	622	2,698			
Subsidized private .....	3,652	1,804	5,516	146	42	188			
Total .....	52,014	15,601	67,675	2,222	664	2,886	1,127	194,414	195,541
Secondary schools:									
Royal athénées .....	5,726		5,726				63,757	412,940	476,697
For boys .....	12,475	(d)	18,196				57,742	321,701	379,443
For girls .....		5,721					33,770	144,309	178,079
Subsidized communal—									
For boys .....	2,046	(e)	3,283				22,092	74,679	96,771
For girls .....		1,237					46,652	20,039	66,691
Communal .....	1,223		1,223				8,325	11,673	19,998
Total .....			28,428				232,338	985,341	1,217,679
Secondary normal schools...	113	250	363						
Superior instruction:									
State universities—									
Ghent (Gand) .....			788			9117			138,456
Liège .....			1,383			120			155,123
Private universities—									
Brussels .....			1,693						
Louvain .....			1,800						

<sup>a</sup> Chiefly tuition fees.

<sup>b</sup> Not including costs of administration, which pertain to the entire elementary department and are borne by the State exclusively, amount \$115,885; excluding also costs of new buildings, repairs, etc., \$527,090.

<sup>c</sup> 7,231 preparatory.

<sup>d</sup> 3,973 preparatory.

<sup>e</sup> 533 preparatory.

<sup>f</sup> Includes repair of buildings and equipment, but does not include expenses of administration, inspection, etc.

<sup>g</sup> Also 44 officers of administration.

<sup>h</sup> Ordinary i. e., material, \$26,740; salaries, \$111,716; in addition extraordinary, i. e., new buildings, etc., \$85,677.

<sup>i</sup> Also, 68 officers of administration.

<sup>j</sup> Ordinary, i. e., material, 35,296; salaries, \$119,827; in addition, extraordinary, \$71,302.

## ELEMENTARY INSTRUCTION.

*Detailed view.*—The system of elementary instruction in Belgium has special interest for the student of public policies. Its history illustrates in a striking manner the opposite tendencies of national and of local authority and the adverse influence of party politics as a factor in popular education. Moreover it affords valuable lessons with respect to a problem of deep and widespread interest, namely, that of religious instruction in public schools.

The development and present status of the system will be best understood in the light of its origin and of the successive laws which have controlled its operations.

*Historic antecedents.*—The history of the modern Kingdom of Belgium begins with its separation from the Netherlands in 1830. The principal provinces comprised within the new Kingdom had long been distinguished by their generous support of the arts and sciences, not only so, but popular education had been fostered in their midst by both church and secular agencies. It is a matter of record that as early as 1192 the citizens of Gand (Ghent) had secured from the court of Flanders a stipulation that "whoever had the will, capacity, and means" should be permitted to open a school in Gand, without opposition. Similar concessions were obtained by other towns, notably Ypres, Antwerp, and Brussels. Thus, in continental Europe, as we have seen formerly in Scotland,<sup>1</sup> the rise of popular education can be traced back to the awakening of the sense of civic responsibility, antedating in truth the Protestant Reformation which is often regarded as its source.

Evidently, then, for a full understanding of this interest as it is maintained to-day in Belgium or elsewhere, it is necessary to know the history of civic life and growth, the origin and spread and concentration of the arts and industries which have bound men together in industrial brotherhoods and communities, emancipated human thought, and quickened and multiplied human activities. It is necessary, moreover, to know the history of scholastic institutions, the ancient prototypes of existing schools and universities, a study for which Belgium affords rich and varied material, illustrating the spirit of every power that has contended for supremacy in western Europe from the days of Charlemagne to the modern era.<sup>2</sup>

No such study is here contemplated; it must suffice to note that the Kingdom began its existence when popular education had become a subject of national interest in all the adjacent States. In Holland, during the period of the final union with Belgium (1815-1830), attention had been specially directed to details of school management and control. The law passed just prior to the union (1806) had imparted to the

<sup>1</sup> Rept. of Commissioner of Education, 1889-90, vol. 1, pp. 212-236.

<sup>2</sup> For a brief summary of this history see citation from "L'Instruction du Peuple," by Émile de Laveleye, pp. 192-194.



schools of the northern division a certain form of organization by the system of inspection which it provided, and higher standards by requiring all primary teachers to secure a professional diploma. Although during the union Belgium resisted the efforts of the Government to modify its own institutions, the influence of this law was felt after the separation. The influence of Protestant Holland fostered also the spirit of local independence which is deeply inwrought into Belgium politics.

*Initial measures.*—The subject of popular instruction was earnestly discussed in the National Congress that framed the constitution of Belgium (adopted February 7, 1831), and the conflict of opposite parties was allayed for the time by a provision that gave equal recognition to all. "Instruction," says article 17 of the constitution, "is free, all prohibitory measures are forbidden; the suppression of abuses is regulated solely by law. Public instruction given at the cost of the State is equally regulated by law."

From 1830 to 1842 primary education was left to the free initiative of individuals and communes. Between party contentions and local apathy the cause languished, and the need of a specific law on the subject became apparent.

*Law organizing primary instruction, 1842.*—The movement that was going on in France under the guidance of Guizot, Cousin, Rendu, and others was followed with deep interest by Belgian statesmen, and in 1842 a law organizing primary instruction was secured similar in its principal provisions to "Guizot's law of 1833," which laid the foundation of the present system of primary instruction in France. The Belgian law, an analysis of which will be found in a citation from de Laveleye (pp. 192-4), made provision for the elementary instruction of all children in inspected schools, either public or private, and the gratuitous instruction of poor children, specified the branches of a limited obligatory programme, authorized inspection by the state and the church, the former confined to secular matters, fixed a minimum salary for teachers (200 francs per annum), and emphasized the importance of their training by the provisions as to normal schools.

On the whole, the law favored the ascendancy of the clergy; they not only had the rights of inspection, but religious instruction, which was inscribed at the head of the programmes, was to be given under their auspices. Rights of conscience were, however, secured by the exemption of children from the religious lessons, who did not belong to the communion of the majority.

The law was regarded as a compromise between the Liberal party, who desired a system of secular instruction under State control, and the clericals, who were opposed to all State interference in scholastic matters. The motives which lead to its adoption are set forth in the exposition by M. de Laveleye already referred to. They reduce in fact to this, that the clergy were in possession of nearly all the agencies

for education existing at the time the measure was adopted. As a compromise, the law was subject to repeated attacks from both parties, but it remained in force till 1878, when the Liberal party gained the ascendancy in the two houses.

*Law of 1879.*—One of the first acts of the new legislature was the creation (August 19, 1878) of a ministry of public instruction. A law reorganizing the system of primary instruction followed July 1, 1879. The particulars in which it departed radically from the previous law were as follows: Every commune was obliged to maintain at least one public school, the actual number to be determined in each case by the Government. (As under the previous law, however, two or more communes might be authorized to unite together for the maintenance of a single school.) Moreover the State could oblige the commune to establish also an infant school and a school for adults.

The ecclesiastical inspection of schools was abolished; teachers must be native Belgians and furnished either with the diploma of a teacher or of a professor in the lower order of secondary schools. It was forbidden to employ as teachers members of a religious order. The programme<sup>1</sup> of obligatory subjects was greatly extended and religious instruction was excluded. This was to be left to the care of the family and the churches, excepting that ministers might be allowed the use of a room in the school building to give religious instruction to the children of their respective communions attending the school, before or after the school session.

For cantonal inspectors appointed by the Government under advice of the provincial authorities, and serving without salary, the law substituted two classes of inspectors, i. e., provincial inspectors appointed by the King and subordinate inspectors appointed by the central authority; all salaried officials responsible directly to the minister or to his representative. The right of the communes to control their own schools was respected by the new law. It determined, however, the manner in which this control should be exercised. Moreover, it created a special agency, school committees (*comités scolaires*), to keep watch over the schools. The members of these bodies were to be appointed by the communal council, excepting where several communes had united to maintain a school, when the appointment went to the minister of public instruction. The minimum salary of teachers was raised to 1,000 francs—the number of State normal schools was raised from 6 to 12.

In brief, the Liberal programme called for a system of secular schools under the surveillance of the State. The measure was heartily approved in the chief cities, which were the stronghold of the Liberal party, but excited intense opposition from the Catholic clergy, whose influence was supreme in the rural regions. Subsequent decrees, especially those of December, 1883, determining the amount which each commune must

<sup>1</sup> For full programme and official directions pertaining to the same, see pp. 194-8.



raise for the support of public schools, increased the opposition, and the clerical party having recovered control of the Government in 1884, almost their first concern was to change the system of public instruction.

*Reactionary measures.*—As a preliminary measure, the ministry of public instruction was abolished and the duties of the same restored to the ministry of the interior, whose chief assumed the double title, i. e., minister of the interior and of public instruction. The law of 1879 was annulled and a new law passed (September 20, 1884), which is still in force. The law is a return, substantially, to the policy of 1842, but with modifications which show that some permanent changes had been wrought in popular sentiment by the measures adopted under the Liberal party. The chief provisions of the law will be found in full in the appendix to this article.<sup>1</sup> Here are noted only the particulars in which it differs essentially from the previous laws or by which its spirit is most clearly illustrated, together with the statistical evidence of their enforcement.

As regards schools, the law gives equal recognition to public (communal) and subsidized private schools (articles 1 and 9). The powers of the communes with respect to the establishment and direction of schools are more explicitly stated than in the previous laws, and the establishment of infant and adult schools made optional (article 2).

Statistics show that at the close of 1890 there were 4,097 communal primary schools and 1,576 subsidized under State inspection. During the triennial period 1887-1890 the privilege of adopting schools had been sought by 250 communes, and 9 had obtained permission to unite with other communes in the support of a school. Of infant schools there were 686 communal and 456 subsidized private, and of schools for adults 1,603 communal and 142 subsidized.

The obligatory programme is much abridged as compared with that of 1879, although not reduced to the meager limits of the earliest law. Religion is not included, but the communes are authorized to inscribe it at the head of the programme, children of dissenters being allowed to withdraw from the exercise. If upon the demand of twenty heads of families having children of school age the commune refuse to include religion in the programme, the Government, at the request of the parents, may adopt one or more private schools which afford the instruction and fulfill specified conditions (article 4).

Since the passage of the law 26 schools have been thus adopted, of which 22 were still maintained at the close of 1890. These schools received about \$23,000, as an annual allowance from the State for the instruction of indigent children.

The appointment and control of teachers is confided to the communal council, which determines also the amount of the salary (article 17). Naturalized as well as native Belgians may be appointed (article 8). State inspection can not extend to religious instruction, and the local

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<sup>1</sup> Pages 199-201



school committees created by the law of 1879 are discontinued (article 10).

The law of 1842 called for 2 normal schools to be founded and maintained by the State, and normal departments in the 5 State high schools (*écoles primaires supérieures de l'État*) (Sec. IV, article 35). By a law of May 29, 1866, 4 new State normal schools (2 for each sex) were authorized. Private normal schools also from the first received official recognition. The law of 1879 raised the number of State normal schools from 6 to 12 (Sec. IV, article 41). The law of 1884 simply authorizes the State, the provinces, and the communes to establish normal schools (article 11), leaving the number to be determined by circumstances. It is provided further that private normal schools may receive subsidies from public funds provided that they submit to State inspection (article 13).

At the close of the last biennial period there were 13 State normal schools and departments (i. e., 7 for men, 6 for women) and 34 subsidized private normal schools (11 for men, 23 for women).

The right of the communes to manage their own schools has never been questioned. As a legal provision, it antedates all school legislation in Belgium since the law of March 30, 1836, organizing the communes, confided the right "to administer, direct, and supervise all communal institutions to the *collège des bourgmestre et échevins*" (a body resembling somewhat a board of aldermen in our own cities). Public education, however, has another aspect than the narrow communal one; it is a matter also of national concern. This fact was recognized in the law of 1842 by the provision of State funds for the work, and of State inspection for all schools participating in the same. It was by increasing the authority of the central administration that the Liberals sought to raise the level and to deepen the results of primary education even in the most apathetic communes. They failed in their broad purpose. Nevertheless, in the chief cities, which are the strongholds of their party, their work endures by virtue of the independence of the communes, which the law of 1884 does not abridge. Moreover, the obligatory programme introduced by the Liberals<sup>1</sup> raised an ideal of popular education not easily destroyed in progressive communities. Undoubtedly, too, it had the effect of keeping the obligatory programme of 1884 above the level of that of 1842.

Under present conditions the Central Government simply maintains an inspection with reference to the very easy conditions required for obtaining the public appropriation. These are sufficient school accommodation, approved buildings, and the maintenance of the obligatory programme. The reports show, however, as we shall see, that the last condition is not strictly enforced. Primarily the commune must bear the cost of elementary education. The State and the province grant subsidies only when the commune has contributed a sum equal at least

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<sup>1</sup> See pp. 194-8.

to the proceeds of 4 centimes additional to the direct tax. Since, however, the poorest communes may receive extra assistance, the Government appropriation is seldom forfeited.

Practically, at present, the control of the schools, excepting in the chief cities, rests with the Catholic clergy.

Official statistics, which in accordance with the requirements of the three laws here reviewed have been elaborately compiled from the date of the organization of the system, afford abundant data as to its general workings. The following particulars are from the latest report, which brings the record to 1891:

*School attendance.*—On the 30th of December, 1890, the communal primary schools (for children 6 to 13 years of age) were attended by 440,646 pupils, and the subsidized primaries by 175,395, or a total attendance of 616,041, about 10 per cent of the population (census 1890). The attendance upon infant schools, 113,172; upon schools for special classes (i. e., deaf mutes and blind, orphans, etc.), in charge of the minister of justice, 7,407; adult schools, 67,675, and the elementary departments of secondary schools, 11,737, raises the above total to 816,032, or 13 per cent of the population in attendance upon elementary instruction. Of the pupils in communal elementary schools 90 per cent (396,235) received free instruction, and of those in subsidized private schools 80 per cent (141,532), or, combining the two classes, 87 per cent of pupils in elementary schools under free instruction.

On behalf of these, payment is made by the boards of charity at a rate determined by the provincial authorities (permanent deputation) subject to the approval of the King. The amount contributed from this source in 1890 was \$89,810; the amount received in tuition fees on behalf of paying pupils was \$132,103. The fee per pupil ranges from \$1.18 to \$4.70 per annum.

*Duration of school period.*—In accordance with the official regulations the primary schools should be in session 240 days in the year. As a general rule a school day is from 4½ to 6 hours, including the intermission between morning and afternoon classes. In 1890 the communal primary schools were open on an average 235 days and the subsidized schools 236. The average number of days' attendance for each pupil was, in the public schools, 178 days for the free pupils and 188 for the pay, and in the subsidized schools 184 and 196 days, respectively. Complaints are made by the inspector of these low averages, which are attributed in the main, to the inability of the teachers to interest pupils or to the indifference of parents in the matter.

The early age at which pupils leave school is another evil upon which the inspectors dwell. Of 81,166 pupils who left the communal schools in 1889-90 without intending to return, only 17,268, or 21.28 per cent, had completed the course of study. In the subsidized schools the proportion was still lower, i. e., 19.07 per cent (5,816 upon a total of 30,491). It is noted also that the number leaving was very nearly 18 per cent of the entire attendance upon the schools.

*Programme maintained.*—The new programme includes seven elementary subjects besides the three R's. The number of schools omitting any of these subjects is carefully reported each year. In 1890 the showing on a total of 5,673 public and subsidized schools was as follows:

Number of schools omitting—

Geography.....	3
History of Belgium.....	7
Elements of drawing.....	11
Singing.....	130
Gymnastics.....	111
Needlework for girls.....	243
Notions of agriculture (rural communes).....	55

In this particular there has been noticeable improvement since 1887.

A fair proportion of schools maintain optional branches in addition to the full obligatory programme. These are called schools with developed programmes (*écoles primaires à programme développé*). Their number and the optional branches they offered in 1890 are as follows:

Primary schools affording instruction in—

Elements of natural sciences.....	1,041
Geometric forms and surveying.....	1,457
Language other than the mother tongue.....	1,927
Notions of constitutional law and political economy (schools for boys and mixed schools).....	285
Notions of hygiene.....	817
Bookkeeping.....	195
Vocal music.....	965
Domestic economy (schools for girls and mixed schools).....	547
Manual work (schools for boys and mixed schools).....	55

An annual public examination (*concours*) of the higher classes of primary schools is held, in which all communal and subsidized primary schools must participate (article 10 of the school law). The number of pupils taking part in the exercise increases a little year by year, reaching a total of 16,763 in 1890. Of these, 12,374 were from public, 2,759 from subsidized private, and 1,650 from uninspected private schools. The proportions of pupils from the three classes of schools securing the certificate of capacity were, respectively, 71.76, 56.30, and 78.36 per cent.

*Teachers.*—The teaching force of public primary schools, as reported December 31, 1890, numbered 5,438 men and 3,153 women, or a total of 8,591. The corresponding totals for the subsidized primaries were, men, 1,189; women, 2,015; or altogether, 3,204. In the schools for both sexes men and women teachers are employed without distinction. The former, however, are more numerous. Only women are employed in girls' schools, as is the case also in infant schools. Of the teachers in the public primary schools only 3.83 per cent were without diplomas, and of those in the subsidized primaries 33.46 per cent.

The average salaries in the public schools were, for masters, \$323; for



assistant masters, \$305; for mistresses, \$314.94; for assistants, \$289. The averages have declined slightly during the triennial period. Of the public school masters 718 pursued some additional calling, and of those in subsidized schools 303. It should be added that communal teachers are generally provided with lodging or its equivalent at the cost of the commune.

The substitution of parochial for public schools allowed under the present law has left many teachers without positions (*en disponibilité*). Teachers thus deprived of service are allowed a salary not less than one-half the salary withdrawn, nor in any case less than 750 francs (\$150). The communal councils determine the amount and duration of this allowance (*traitement d'attente*); the time counts in calculating pensions. Teachers absent from their post by reason of sickness also receive a portion of their salaries.

The statistics show that on December 31, 1890, under the first provision, 752 teachers were receiving salaries to the total annual amount of \$161,053, and 76 teachers unable to attend to their duties, a total amount of \$21,518. Pedagogical conferences are held every quarter in each canton and under the direction of the cantonal inspector, attendance upon the same being obligatory for all communal teachers; teachers in the subsidized schools are free to attend or not, and the same freedom is accorded the teachers of all infant schools. In 1890, the number of conferences reported was 1,503 (i. e., for masters, 790; for mistresses, 589; for infant school teachers, 124). As there are 319 cantons it appears that inspectors even exceed the requirements of the law in respect to this part of their duties.

The attendances upon the conferences for teachers of communal schools were 5,059, 2,874, and 1,178, respectively. The corresponding figures for the subsidized schools are 223, 259, and 7, respectively. The Government also maintains normal courses corresponding to our teachers' institutes. These are in session during the long vacations.

The influence of these conferences and summer courses is increased in many places by the pedagogical museums. These afford suitable halls for the conferences, while the collections of illustrative material add greatly to the effect of the practical teaching exercises that are a feature of the proceedings. Three such museums are maintained at Brussels (Province of Brabant) and two in each of the eight remaining provinces. Teachers also have the benefits of the National School Museum (*Musée Scolaire National*) at Brussels, an institution similar in its objects to the *Musée Pédagogique* at Paris. Models of school furniture and school apparatus and a fine library are included in the collections of the national museum. All the material is admirably classified and arranged in the new buildings, first occupied in 1890. Exhibition of school work are made here annually, lectures delivered, and conferences maintained on subjects of interest to teachers.

In this connection mention should be made of the Belgian teachers

association (Fédération générale des instituteurs belges). It was organized in 1869, and has been a powerful means of stimulating zeal and extending professional knowledge among the Belgian public school teachers.

The civic decorations for teachers, instituted July 21, 1867, are an incentive to efficient and continuous service. These awards are of four classes—the civic cross, first and second class, and civic medal, first and second class. Altogether 56 decorations were conferred in 1890.

*Pensions.*—Teachers have the right to a pension upon the same terms as persons in other branches of the civil service. The amount of the pension is calculated at the rate of one fifty-fifth of the average salary for the last five years of actual service. Upon this calculation the pension ranges from \$200 to \$400 annually. The State, the communes, and the provinces bear the expense, the first two contributing each two-fifths, the last one-fifth of the amount. The number of teachers on the pension list December 31, 1890, was 1,644, and their combined pensions 1,725,170 francs (about \$345,034).

A fund is also maintained by the State, provinces, and communes for the widows and orphans of communal teachers, to which fund teachers desiring its benefits for their families must contribute annually 3 or 4 per cent of their salaries. In 1890 the amount paid from this fund was 525,704 francs (\$105,141).

*Normal schools.*—In 1890 the 13 State normal schools and departments<sup>1</sup> were attended by 711 students and employed a teaching force of 205 teachers and officers. The 34 subsidized private normals were attended by 1,805 students.

With few exceptions the normal schools have boarding departments. Promising students, whose parents are too poor to meet the charges, may obtain the aid of the scholarships maintained by the State, the provinces, and the communes. In 1890 the number of scholarships provided in the State schools was 1,130, representing a money value of \$23,845, and in the subsidized normals 1,536, having a money value of \$29,634.

The course of the State normal schools is arranged for three years, and includes the following obligatory branches: Moral precepts, elementary notions of the constitutional and administrative institutions of the country, and also of primary school legislation, theory and practice of education; the mother tongue (grammar and literature), a second language (French, Flemish, or German, according to local demands); arithmetic, theoretic and practical, together with the complete system of legal weights and measures; geography, and particularly that of Belgium; outlines of general history and the detailed history of Belgium, notions of agriculture in the schools for men, and needlework in those

<sup>1</sup> The State normal schools for men are Gand, Lierre, Mons, Nivelles, Verviers, the normal departments Couvin, Huy. For women the schools are Bruges, Liege, and Tournai; departments, Andenne, Arlon, and Brussels.

for women; writing, drawing, vocal music, gymnastics. All the above enumerated branches are included in the examination for a Government diploma. There are besides optional branches, as follows:

In the schools for men, algebra, geometry, natural sciences, natural history, physics and chemistry, elements of hygiene, bookkeeping.

In the schools for women, geometric forms, elements of natural science, natural history and physics, elements of hygiene, bookkeeping, elements of domestic economy and gardening. A third language may be taken in any of the schools.

In State normal schools the training is eminently professional, theory is supplemented by practice, for which purpose 11 of the normals have attached to them model elementary schools (*écoles d'application*). Pupils are not admitted to training under 16 years of age nor above 23. They must pledge themselves to teach in the public schools three years after graduation. The internal conduct of the schools, the staffing, examinations, etc., are regulated by the minister.

Teachers' libraries are also maintained in several communes either wholly or in part by public funds. It appears from the report that at the date, December 31, 1890, there were 191 of these libraries, comprising 130,357 volumes. The number of volumes taken for home reading during the triennial period 1887-1890 was 25,669, and the number of teachers borrowing books 9,781. Complaint is made that so few teachers appreciate the advantages thus offered, but improvement is noticed in this respect.

*State inspection.*—For the service of State inspection there are 18 principal inspectors and 80 cantonal inspectors. The former receive salaries varying from \$1,000 to \$1,500; the latter from \$600 to \$900; traveling expenses are also allowed. The majority of district inspectors are chosen from the ranks of successful teachers; the principal inspectors are either promoted from the district inspectorship or were formerly professors in normal or secondary schools. From the report it appears that the district inspectors are careful to meet the requirements of an annual visit to each school in their respective districts. In 1890, on a total of 5,673 schools, 4,128 had been visited more than once, and 1,454 once only. In addition 1,102 infant schools had been visited out of a total of 1,146, and 750 adult schools on a total of 1,749. The number of conferences conducted by these officials has already been given. The chief duties of the principal inspectors are advisory and the preparation of reports which are based upon those of the subordinate inspectors. The number of visits made by them to individual schools in 1890 was 2,480, at which rate they would fully meet the requirement of a visit to each school once in two years.

*Finances.*—The cost of maintaining the entire system of elementary instruction, including ordinary and extraordinary expenditures, in 1890, was 23,898,679 francs, or about \$5,779,000. Of this amount the communes contributed 44.2 per cent; the provinces, 6 per cent; the



State, 41 per cent; school fees, 5 per cent; boards of charity, 2 per cent. The small remainder came from donations, balances, etc.

*Effects of changing policies.*—A school system left so largely to local influences as that of Belgium will necessarily present widely different degrees of efficiency and development in different localities. These differences, which exist in all countries, have presumably been intensified in Belgium, where elementary education, as we have seen, has been particularly subject to political influences.

The changes from national to local supremacy and from secular to sectarian management have not been accomplished without great excitement and bitter party recriminations.

While the law of 1879 was in force the Clericals accused their opponents of forcing communes to support schools which they did not want. The Liberals now retort that the people are kept from attending the schools they prefer by threats of excommunication and appeals to superstitious fears. Certain it is that under the law of 1879 Clerical schools had to live in spite of the Government, and equally certain that under the law of 1884 large numbers of public communal schools have been closed and their teachers deprived of employment. Official statistics, which have been systematically reported since 1836, confirm these statements. For comparison, it suffices to select the years which mark, respectively, the close of the period under the law of 1842, and that under the Liberal law (i. e., 1878, 1883), and also 1890, the latest year of report. The changes from period to period are indicated in the statistics of enrollment in communal and adopted schools (private schools have not been included in the returns since 1878), percentage of clerical teachers, and the proportion of income derived from each contributing source. These items are as follows:

Year.	Enrollment.				Teachers, per cent of clerical.	Income (per cent) from—					Sub- scrip- tions, bal- ances, etc.
	Com- munal.	Adopted.	Total.	Per cent of popu- lation.		State.	Prov- inces.	Com- munes.	Tuition fees from—		
									Par- ents.	Char- itable funds.	
1878 .....	527, 417	70, 796	598, 213	10.8	17.2	47	2.2	36.6	8.48	3.35	2.37
1883 .....	345, 687	325	346, 012	5.9	.2	50.5	2	35.6	2.58	2.84	6.48
1890 .....	440, 646	175, 395	616, 041	10	14.8	39	6.6	47	3.47	2.36	1.57

The fluctuation in the teaching body is the most significant fact brought out in the above showing. Under the law of 1879 the teachers belonging to religious denominations were practically eliminated from the communal schools. They were free, however, to continue their work in the church schools, which received nothing from public funds. That this was their course is apparent from the decline in public school enrollment, for it is scarcely to be supposed that the children withdrawn from these left school altogether. Under the new law the religious teachers are being rapidly restored and church schools adopted in the

place of nonsectarian communal schools, which are consequently suppressed. The extent of these changes is indicated by the following statistics, quoted by M. Bara in the Chamber of Representatives during the discussion of the educational appropriations for 1894. Said this member:

You have suppressed 877 primary schools, 228 infant schools (*écoles gardiennes*), and 1,079 schools for adults, a total of 2,184 public schools, with 44,987 scholars. You have struck the teachers in a manner incredible: 1,047 teachers have been placed on the roll of those awaiting engagements at a reduced salary; 1,500 received nothing. You have decreased the salary of 3,316 teachers. I cite this from official returns. To-day it is proposed to give a part of the appropriation to private education.

Consider the situation of France, which has six times as many inhabitants as Belgium.

There are in France 66,340 primary public schools. We have but 5,000 schools, one-thirteenth the number in France. The schools of the latter are attended by 4,400,000 scholars, ours by 433,000, not even one-tenth. Belgium has an appropriation of 7,400,000 francs; France has twenty-two times as much for a population which is only six times as large as ours.

In future we shall pay for this inferiority of our population as compared with that of France. Where suffrage is universal it is necessary that everybody should be educated.

We may add that actually, after ten years waiting, there are more than 580 teachers without employment because their places have been declared vacant (*en disponibilité*).

It should be noted that the school attendance quoted above is in public schools only and the funds specified are the State appropriations. The attendance in adopted or subsidized schools raises the total attendance to 616,041, and local appropriations (provincial and communal) raise the public funds devoted to primary education to a total of 19,840,280 francs (\$3,870,877).

That these changes in the school system have interfered with the true purposes of elementary education seems evident also from the degree of illiteracy prevailing in Belgium. The census of 1890 gives 38 per cent as the proportion of illiterates in the entire Kingdom, or by sex, 36 per cent of men and 40 per cent of women.

In the discussion of a table showing the distribution of illiterates by sex and age, the reporter says:

In examining this table it is impossible to ignore the fact that among the children 8 to 15 years of age nearly 22½ per cent are still illiterate. The proportion was 25 per cent in 1880 and fell then to 20 per cent for those from 15 to 25 years. To-day the latter show only 15 per cent of illiterates. The actual gain in the proportion of persons between 15 and 25 years of age able to read and write has thus been 7½ per cent during the last ten years.<sup>1</sup> It is among the persons of this age that instruction is most diffused. For those above 25 years of age the statistics show a constant decrease in the number of literates. This is true both of the census of 1880 and of 1890. The diminution varies from 3 to 4 per cent for each quinquennial period. (Census 1890, vol. 1, pp. XLII, XLIII.)

<sup>1</sup>The tables show an increase of 17.3 per cent in the total population 15 to 25 years of age in the decade 1880-1890, and an increase of 25 per cent in the proportion able to read and write, or a gain in the latter of 7.5 per cent.

*Auxiliary agencies.*—Belgium is par excellence a country of beneficiary associations and of public charities, and it naturally follows that the needs of poor children are carefully looked after.

The boards of charity, which are organized on a legal basis in each commune, help, as we have seen, in defraying the cost of elementary education. In a great many places they also give assistance to destitute families. There are very few vagrant children in the Kingdom.

The school savings bank has been fostered as a means of inculcating thrift, but at the present time the general sentiment of teachers seems to be opposed to the system. The official report states that—

The savings bank is not fostered in the subsidized schools for adults and for infants, and has little development in the subsidized primary schools. As to communal or public schools, the savings bank works well in the primary grades, but has little success in the infant schools and schools for adults.

The total investments made by pupils of the primary schools in 1890 amounted to \$721,856, of which \$45,227 only were from pupils of the subsidized schools.

School colonies or vacation schools for the poor children, which originated in Zurich in 1876, flourish in Brussels and several other cities of Belgium. Their purpose is to afford the poorest children of the great cities a brief sojourn in the country during the heated season, with the chance for useful and healthful training at the same time. The first experiment in this direction in Belgium was made in 1886 by Dr. Kops, communal councilor at Brussels. He endeavored at the outset to form a private society, composed of Catholics and Liberals, for the support of the undertaking. Failing in this he appealed to the municipal authorities for aid. The response was immediate. From that time school colonies made rapid progress in Belgium. Brussels, the capital, took the lead; the cities of Liège, Verviers, Anvers, and Gand were not far behind. Two large philanthropic societies of Brussels, the Progrès and the Marçunvins, have sustained the work with great zeal—the first, since 1888; the second, since 1892. They are aided in their generous efforts by private initiative, and by subsidies from the city itself. The latter also every year organizes colonies on its own account.

The following statistics summarize the work at Brussels:

*Number of pupils.*

Year.	Brussels.		Progrès.		Marçunvins.		Total.
	Boys.	Girls.	Boys.	Girls.	Boys.	Girls.	
1886 .....	30						30
1887 .....	60	30					90
1888 .....	60	60		30			150
1889 .....	75	30		70			175
1890 .....	63	65		75			203
1891 .....		55	120	64			239
1892 .....			90	94		80	264
1893 .....	30		90	80		94	294



## INTERMEDIATE INSTRUCTION.

Intermediate instruction (*enseignement moyen*) is the term applied in Belgium to that part of instruction which lies between the primary schools, whose age limit is 14 years, and university education, upon which students enter at 18 or 19 years of age. Historically the institutions for intermediate instruction are distinct from the primary schools, and the distinction is maintained in their public administration. Between the two classes of institutions, however, a relation is established by means of public and private scholarships awarded generally upon competitive examination.

*Classification of State schools.*—The public intermediate schools are of two classes, those supported by the Government and those maintained by the communes.

The Government schools are of two grades—the royal *athénées* or higher intermediate schools, whose courses comprise seven years, and the lower intermediate schools of three years. The latter include what were formerly termed superior primary schools, and also the industrial and commercial schools. The royal *athénées* are for boys only; the lower intermediate include schools for boys and also for girls.

*Number of schools and enrollment in the same.*—By the law of September 20, 1884, the number of *athénées* is fixed at 20. The province of Hainaut has 5, Brabant and Liège each 3, Anvers, occidental Flanders, and Limbourg each 2, and the remaining provinces, i. e., oriental Flanders, Luxembourg, and Namur, 1 each. As shown in the table (p. 160), the *athénées* were attended in 1890 by 5,726 pupils. Of these, 1,751 were admitted gratuitously and 1,109 at a reduced fee. The full fee differs in the several *athénées* and also in the different sections of each, the lowest fee being 20 francs (\$4) and the highest 120 francs (\$24) per annum. Lower intermediate schools (*écoles moyennes inférieures*) can not exceed 100 for boys and 50 for girls. (Law of September 20, 1884.) Actually in 1890 there were 79 schools of this class for boys, attended by 12,475 pupils, of whom 4,537 were admitted gratuitously and 3,487 at reduced rates. The annual fee varies in these schools also, the highest being 72 francs (\$14.40) per annum and the lowest (preparatory section) 6 francs (\$1.20).

The number of this class of schools for girls in 1890 was 36, attended by 5,721 pupils, 1,367 under free instruction and 1,528 at reduced rates, and the remainder paying full fees, which ranged from 14 francs (\$2.80) to 120 francs (\$24) per annum.

*Support and control.*—The towns in which these State schools are situated generally give the buildings, and the State appropriation covers the excess of the current expenditure above the receipts from fees.

Both grades of schools are controlled by the Government in accordance with the law of June 1, 1850, subsequent modifying laws, and royal decrees.

*Teachers—classification and salaries.*—The teaching force in the athénées consists of a prefect of studies, professors, and masters (surveillants); in the lower intermediate schools of a director (in schools for girls a directress), regents, and teachers. The prefects, professors, directors, and regents are appointed by the King, the masters and teachers by the minister. The prefects and professors of the athénées must have a doctor's degree. The regents and teachers of the lower schools must have the diploma of a professor agrégé, which is obtained by a rigid examination before a special committee, or for the lowest positions the diploma of a primary teacher. A special diploma (diplôme d'institutrice) is instituted for the directresses and teachers of the secondary schools for girls.

The salaries are fixed as follows:

	Salaries.	
	Mini- mum.	Maxi- mum.
<i>Athénées.</i>		
Inspector of studies (préfet des études).....	\$840	\$920
Professor of third class.....	520	580
Professor of second class.....	640	680
Professor of first class.....	740	820
Master (surveillant) of second class.....	440	480
Master (surveillant) of first class.....	520	560
<i>State intermediate schools for boys.</i>		
Director.....	560	660
Master (régent) of second class.....	400	440
Master (régent) of first class.....	460	500
Teacher (instituteur) of second class.....	320	360
Teacher (instituteur) of first class.....	400	440
<i>State intermediate schools for girls.</i>		
Directress.....	560	660
Mistress (régente) of second class.....	400	440
Mistress (régente) of first class.....	460	500
Teacher (institutrice) of second class.....	320	360
Teacher (institutrice) of first class.....	400	440
Professor having diploma of capacity for teaching drawing, music, or gymnastics...	180	220

The professors of the State secondary schools have the right to a pension.

*Communal schools*—The communal schools either receive a subsidy from the Government, in return for which they must admit a certain number of free students, or are maintained wholly by the communes. Of the former there are eight for boys and four for girls. They must conform to Government regulations in respect to programmes, textbooks, and the appointment of professors.

The attendance upon the communal schools, subsidized and exclusively communal, raises the total number of students in public intermediate schools to 28,428, of whom 11,737 were in preparatory classes.

*Examinations and diplomas.*—The athénées occupy about the same position in the Belgian system of education as the lycées do in the French system or the gymnasia in the German. Students who complete the course and pass the final examinations before a committee

appointed by the Government receive a diploma (diplôme de sortie) which admits them to the universities. Students who complete the courses in the lower intermediate schools for either boys or girls and pass a final examination also receive a diploma. Annual competitive examinations (concours généraux) for distinctions (i. e., honorable mention and prizes) are held in which the students of the various classes of secondary schools participate.

*Special courses for professors.*—In 1847 the Government created special pedagogical courses to prepare professors for the athénées, i. e., courses of humanities at Liège, and of science at Ghent. In 1852 these courses were organized as special normal schools and so continued until 1890, when they were merged into the universities—the former into the faculty of philosophy and letters, University of Liège; the latter into the faculties of science, University of Ghent. There still remain the normal courses for teachers of the lower secondary schools of the State, i. e., for teachers of boys' schools at Ghent and Nivelles, and for teachers of girls' schools at Brussels and Liège.

*Clerical schools.*—Parallel with the public provision for intermediate or secondary education are the clerical schools, which are more numerous than the public schools. It is stated officially that salaries are higher in the former than in the latter, with the result of attracting the best teachers to the clerical schools.

*Curricula and programmes.*—In Belgium, as in other countries, the question of classical *versus* scientific training has been earnestly discussed ever since the organization of intermediate instruction (law of 1850). On account of the freer spirit of the Belgian system the movement in favor of science and modern languages has had less opposition than in adjoining countries. A peculiar complication, however, has affected the movement in Belgium. Here the period of secondary study is shorter than in either France or Germany, i. e., five or six years,<sup>1</sup> as against nine or ten. This has made it difficult for students to reach the standard in classical studies that prevails on the continent, and has operated also to the disadvantage of Belgian universities. The difficulties have necessarily been increased by the endeavor to provide for additional studies. Without entering into the details of the various adjustments attempted from time to time, it must suffice to present here the present organization and programmes of the royal athénées, the typical secondary schools of Belgium, as established by royal decree of August 5, 1888.

The athénées are divided into three sections, as follows:

Latin and Greek humanities.

Latin humanities.

Modern humanities.

In each section the number of classes or years of study is seven.

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<sup>1</sup>As determined by the requirements for admission to the degree examinations. See page 185.



The programme of the section of Latin and Greek humanities comprises the following subjects:

Religion,	German,	Natural sciences,
Latin,	English,	Drawing,
Greek,	History.	Writing,
French,	Geography,	Music,
Flemish,	Mathematics,	Gymnastics,

Notions of the constitutional and administrative institutions of the country.

The programme of the section of the Latin humanities is the same as the foregoing, with the exception that Greek is replaced by extra mathematics and science.

The course in modern humanities is also the same, with the exception of Latin and Greek and the addition of commercial sciences. The last-named section is composed of a lower division, comprising four years' study, and of two higher divisions, the scientific and the commercial and industrial, each composed of three classes.

In the adaptation of these programmes to the different sections of Belgium, i. e., the French or Walloon, and the Flemish or Dutch, only the courses in modern language are varied.

The following schemes show the number of hours a week assigned to each study in the athénées of the Walloon districts:

[Figures in parentheses indicate number of hours for optional studies.]

Studies.	Classes.							Total.
	Seventh.	Sixth.	Fifth.	Fourth.	Third.	Second.	First.	
Religion .....	2	2	2	2	2	2	2	14
Latin .....	6	7	8	8	8	8	8	53
Greek .....			5	5	5	5	5	25
French .....	7	6	3	3	3	3	3	28
Flemish or German (obligatory) .....		5	3	3	3	3	3	20
German or Flemish (optional) .....				(2)	(2)	(2)	(2)	(8)
English .....				(2)	(2)	(2)	(2)	(8)
History .....	2	2	2	2	2	2	2	14
Geography .....	1	1	1	1	1	1	1	7
Mathematics .....	3	3	3	3	3	3	3	21
Natural sciences .....				2	2	2	2	8
Drawing .....	2	2	2	(2)	(2)	(2)	(2)	6+(8)
Music (optional) .....	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(7)
Gymnastics (two hours during recreation) .....								
Total hours of obligatory lessons .....	23	23	29	29	29	29	29	.....

#### LATIN HUMANITIES.

Religion .....	2	2	2	2	2	2	2	14
Latin .....	6	7	8	8	8	8	8	53
French .....	7	6	3	3	3	3	3	28
Flemish or German (obligatory) .....		5	3	3	3	3	3	20
German or Flemish (optional) .....				(2)	(2)	(2)	(2)	(8)
English .....				(2)	(2)	(2)	(2)	(8)
History .....	2	2	2	2	2	2	2	14
Geography .....	1	1	1	1	1	1	1	7
Mathematics <i>a</i> .....	3	3	4	4	6 {	6 {	8 {	34
Natural sciences <i>a</i> .....			2	2	3 {	2 {	2 {	9
Drawing .....	2	2	2	2	2	2	2	14
Music (optional) .....	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(7)
Gymnastics (two hours during recreation) .....								
Total hours of obligatory lessons .....	23	23	27	27	30 27	29 28	29 28	.....

*a* After the third class (troisième) for mathematics and the second class for natural sciences, there is a bifurcation, and students may choose between the two series indicated in the programme.

*b* Not including manipulations.

## MODERN HUMANITIES.

[Figures in parentheses indicate number of hours for optional studies.]

Studies.	Classes.										Total.		
	Seventh.	Sixth.	Fifth.	Fourth.	Third.		Second.		First.				
					Scientific.	Commercial.	Scientific.	Commercial.	Scientific.	Commercial.			
Religion .....	2	2	2	2	2		2		2		14		
French .....	8	8	8	6	5		5		6		46		
Flemish or English (principal language) .....	6	6	3	3	3		3		3		27		
German or English (additional language) .....		2	4	3	3		3		3		18		
English .....				(2)	2	(3)	3	(3)	3	(2)	2	(10)	10
History .....	2	2	2	2	2		2		2		14		
Geography .....	1	1	1	1	1		1		1		7		
Mathematics .....	3	3	4	4	6	3	6	3	8	3	34	23	
Natural sciences .....			2	2	3		2	4	4		9	15	
Commercial sciences .....				3		3		4	4		3	14	
Drawing .....	2	2	2	2	2	(2)	3	(2)	3	(2)	16	8 + (6)	
Music (optional) .....	(1)	(1)	(1)	(1)	(1)		(1)		(1)		(7)		
Gymnastics (two hours during recreation) .....													
Total hours of obligatory lessons .....	24	26	28	28	30	27	28	27	30	28	30		

a After troisième for mathematics and the second class for natural sciences, there is a bifurcation, and students may choose between the two series indicated in the programme.

The organization decreed in 1881, which is replaced by that of 1887, also comprised two distinct sections, i. e., section of humanities and the professional (industrial and commercial). The former included three parallel courses, one based upon Greek and Latin, the other two upon Latin without Greek. Of the two Latin courses, one was adapted to students who gave preference to mathematics and physics, the other to those who desired natural science, especially, as a preparation for the medical faculty. This attempt at extreme specialization is now abandoned. The apparent division of the classical course into two parallel courses is in reality nothing more than making Greek optional, students being allowed to substitute for this study extra mathematics and science. The new name given to the section which omits the classics, i. e., modern humanities, in place of professional, emphasizes the tendency to make it more truly a culture course than a technical course.

The lower intermediate schools have been regarded both as schools preparatory to the athénées and as finishing schools for students obliged to enter early upon practical pursuits. Recent modifications have resulted in a programme more especially adapted to the latter purpose than heretofore. It is, however, permitted to the directors to modify the model course by introducing Latin for students who intend to enter the classical section of an athénée. The model course is as follows:

*Subjects of study and the time assigned to each in the lower intermediate schools of the State (Écoles moyennes de l'état) for boys.*

Subjects.	Third class, or first year.	Second class, or second year.	First class, or third year.
Religion.....	2	2	2
French.....	8	7	6
Flemish (obligatory in Flemish districts).....	6	6	6
Flemish or German (obligatory in Walloon districts).....			
First optional study, German (Flemish districts); Flemish or German (Walloon districts).....		a 3	a 3
Second optional study, English.....		2	
History.....	2	1	2
Geography.....	1	5	1
Mathematics.....	4	1	6
Natural sciences.....	b 2	b 2	b 2
Bookkeeping and elements of commercial law.....		1	2
Drawing.....	2	2	2
Music (optional).....	a 1	a 1	a 1
Gymnastics (three hours during recreation).....			
Total obligatory hours.....	27	28	29

a Optional.

b Not including field and laboratory exercises.

*Subjects of instruction and number of hours a week assigned to each in State intermediate school for girls.*

Subjects.	Third class, or first year.	Second class, or second year.	First class, or third year.
Religion.....	2	2	2
French.....	6	6	6
Flemish (in obligatory Flemish districts).....	6	5	5
Flemish or German (in obligatory Walloon districts).....			
First optional language, Flemish (Flemish districts); Flemish or German (Walloon districts); second optional language, English.....		(3)	(3)
History.....	2	2	2
Geography.....	1	1	1
Natural sciences and notions of hygiene.....	2	2	2
Commercial sciences.....		1	2
Mathematics.....	3	3	3
Manual work, notions of domestic economy.....	2	2	2
Drawing.....	2	2	2
Music.....	1	1	1
Gymnastics (two hours during recreations).....			
Total number of hours for obligatory lessons.....	27	27	28

*Finances.*—By reference to the table, page 160, it will be seen that the current expenditure for intermediate schools amounted in 1890 to \$1,217,679. The income from all sources was \$1,270,731, a slight excess over the current expenditure. Of this income the State furnished 53 per cent, the communes 26 per cent, the provinces 0.7 per cent, and tuition fees 16.7 per cent. The small balance was from property, gifts, etc. The appropriation from the public treasury for administration and inspection services, for prizes, scholarships, training and examinations of professors, etc., not included in the above, amounted to about \$81,000.

#### SUPERIOR INSTRUCTION.

*The universities and their origin.*—The establishments for superior instruction in Belgium are the two State universities, Ghent in the Flemish section, and Liège in the French; the Independent University



of Brussels and the Catholic University of Louvain. The last named is the oldest seat of learning in Belgium, having been founded in 1426 by Jean IV, Duke of Brabant. Like the ancient universities of France, it was suppressed during the revolutionary period (October 25, 1797). It was temporarily reorganized in 1816, and finally in 1835.

The faculties established at Brussels under the control of the Imperial University (1806) may be regarded as the beginning of the University of Brussels, although the university, as such, was not created until 1834. In 1816, or the year following the union with the Netherlands, universities were founded at Ghent and Liège.

The Government which was established in 1830 recognized, provisionally, the three universities existing at the time, i. e., Ghent, Liège, and Louvain. By a law of 1835 the two former were constituted State universities, their organization, conduct, and courses of study to be determined and their maintenance provided by the Government. The same law instituted examining juries, to be appointed by the King and the two chambers, for conferring academic degrees. From that time until 1876 the degree-conferring function remained detached from the universities.

*Constitution of State universities.*—As constituted by the law of 1835 each of the State universities comprises four faculties, i. e., of philosophy and letters, of science (mathematics, physics, and natural sciences), of law, and of medicine. In pursuance of the provision that the faculty of sciences at Ghent should offer the instruction necessary for the arts and manufactures, civil architecture, construction of roads and bridges, and the same faculty at Liège the instruction required for the arts and manufactures and mining industries, a school of civil engineers was attached to the former and a mining school to the latter. (Regulation of September 27, 1836.)

From the promulgation of the law of 1835, the Government was actively engaged in the work of organizing and developing the State universities. In 1849 a second law was passed defining more specifically the organic character and the standards of these institutions. Subsequent laws, especially that of 1890, have increased the authority of the universities by according them a representation in the examining juries, but their constitution and scholastic functions remain substantially as determined by the law of 1849.

*Professors.*—The teaching corps comprises professors, ordinary and extraordinary, appointed by the King. They must have a doctor's degree and must devote themselves exclusively to their university duties. These duties, as also the privileges which professors enjoy, and the penalties to which they are subject, are prescribed by the law or by royal decrees. The annual salaries are 7,000 francs (\$1,400) for extraordinary professors and 5,000 francs (\$1,000) for ordinary, with a possible augmentation of from 1,000 to 3,000 francs (\$200 to \$600). Professors are retired as *émérite*, with an annual pension equal to the aver-

age salary of the last five years of service, when they reach their seventieth year, or if disabled by serious and permanent infirmity. The law allows for each university 13 professors in the sciences, 12 in philosophy, 10 in medicine, and 7 in law. In case of necessity one or two additional professors may be appointed in each faculty. (Law of July 15, 1849, art. 10, modified by laws of May 22, 1882, and May 22, 1892.) In 1891 Ghent had a staff of 67 professors in the four faculties and 24 professors and teachers in the special schools; Liège, 68 professors in the faculties and 17 professors and teachers in the special schools.

Special professors called *agrégés* are also assigned to each university in such numbers and for such courses as circumstances may demand. The conditions of the service have been the subject of many decrees. At present, aspirants must have a doctor's degree and also a special diploma indicating high attainments in some distinct department of knowledge.

The courses which the *agrégés* give are additional to the regular courses; they have no salaries, but may receive fees, and may be engaged in other pursuits, as law, medicine, etc. The *agrégés*, naturally, become candidates for vacant chairs, so that the service is in a sense a preparation for full professorships. There are also assistants for laboratory exercises and clinics. The professors and assistants, with the officers of administration, raised the personnel of the University of Ghent to a total of 161 in 1891, and that of Liège to 188.

*Officers of administration.*—The official authorities of each university are the rector, the secretary, the deans of faculties, the academic council and the *collège d'assesseurs*. The rector is appointed by the King for a term of three years. He is the executive head of the university and has general charge of all its affairs. He may at his will convoke the *collège d'assesseurs* for advice. This body consists of the secretary of the academic council and the deans of faculties. The latter, as also the secretaries, are chosen by the professors themselves and are thus their direct representatives. The academic council consists of all the professors of a university who, in their collective capacity, determine the conduct of the scholastic affairs as the management of courses, timetables, etc.

Through these advisory functions the professors have really a voice in the administration of the universities. Their chief importance in this respect, however, lies in the fact that they are represented in the *conseil de perfectionnement* of superior instruction, which the minister must convoke at least once a month. The constitution of this council is as follows: Eight professors (one from each faculty of the universities), the two rectors, the two Government inspectors (*administrateurs-inspecteurs*), and other members of the teaching profession chosen by the minister. This council gives advice upon all matters pertaining to superior instruction. It should be added that, while the rectors have

general charge of students, the professors exercise disciplinary authority over those of their respective classes, and may even suspend a disorderly student.

*Fees for students.*—Students are received and enrolled by the rector, the fee for enrollment being 15 francs (\$3). After this formality is completed, the student takes out a ticket for the studies of the courses he proposes to follow. The fee for the ticket is 250 francs (\$50) in philosophy, literature, and law, and 200 francs (\$40) in the other faculties. There are also fees for the use of laboratories, for clinics, etc., and extra fees for special lessons or courses.

*Lessons and courses.*—Instruction is given in the French language, except by special dispensation from the minister. A lesson occupies at least an hour. Courses must be so arranged that the student has not less than three hours of lessons each day, not comprising clinics and laboratory exercises.

The minimum duration of the course is determined by the requirements for degrees, which will be considered hereafter.

Attendance upon the lessons is obligatory, and every three months the professors report to the rector students who fail in this obligation.

*Scholarships and prizes.*—Students of ability who can not afford the expenses of university education may be assisted by scholarships (bourses), of which the State maintains 120, of the annual value of \$80 each. Study in foreign countries is promoted by traveling scholarships, 21 in number, of the annual value of \$400 each and available for two years. Competitive examination for the latter is open only to persons who have received the degree of doctor, of pharmacist, or of engineer. Annual competitive examinations (concours universitaire) are held, at which the successful contestants receive medals, accompanied with prizes of books or money amounting to \$80 each.

The universities of Brussels and Louvain have each the four faculties of the same order as those of the State universities, to which Louvain adds the faculty of theology. As shown in the table (p. 160), the combined attendance upon the four universities in 1890-91 was 5,664, distributed as follows:

Universities.	Faculties.				Total of faculties.	Faculty of theology.	Special schools.	Total faculties and special schools.
	Philosophy and letters.	Law.	Sciences.	Medicine.				
Ghent .....	75	186	165	187	613	.....	175	788
Liège .....	223	338	305	282	1,148	.....	235	1,383
Brussels .....	147	367	477	557	1,548	.....	115	1,663
Louvain .....	210	391	317	445	1,363	40	397	1,800
Total .....	655	1,282	1,264	1,471	4,672	40	922	5,634

*Buildings and equipments.*—Under the law of 1835 the task of furnishing suitable buildings for the State universities was left to the cities



in which they were located. This obligation, willingly undertaken, in time proved too great a drain upon the resources of the cities. Their inability to bear the burden alone was particularly manifest after the passage of the law of 1876, which greatly extended the scientific work of the universities. An official inquiry with respect to buildings and equipments resulted in a special State appropriation for these purposes amounting to \$900,000, i. e., \$550,000 for Liège, and the balance for Ghent. With this assistance the work of erecting new buildings and of reconstructing or enlarging the old has been pushed with vigor. Among the most important of the new structures are the Institute of Sciences for the University of Ghent, completed in 1889, and the Institute of Chemistry, University of Liège.<sup>1</sup>

The triennial report, 1889-1891, which brings the statement to the end of the period, shows a total expenditure for the new constructions of \$1,782,070, of which \$293,445 had been expended during the three years specified.

*Current income and expenditures.*—The State appropriation for superior education amounted in 1891 to \$435,154, upon which there was an expenditure of \$427,374. This includes costs of administration and examinations, current expenditures, and the extraordinary expenditures, i. e., for buildings and equipments.

The expenditure for salaries and for material for the two universities in 1891 was as follows:

	Salaries.	Material.
Ghent .....	\$121,915	29,919
Liège.....	127,691	39,552

In addition to the State appropriations the two universities received about \$4,400 from communal and provincial funds, of which a little more than half was for scholarships. The University of Brussels receives an annual allowance from the city and also from the Province of Brabant. The former amounted in 1891 to \$12,320, and the latter to \$4,000.

Fees, which are the chief source of income for Brussels and Louvain, are the same as at the State universities.

*Degrees.*—Until a recent date the distinctive feature of superior instruction in Belgium was the separation of the scholastic and the degree conferring functions. It is true that the law of 1835 authorized the universities to confer certain diplomas. They were, however, distinctions merely, and carried no rights in the Kingdom.

<sup>1</sup>For description of the new buildings see report of the minister upon superior instruction, 1889-1891, Chap. II, pp. 34-46. See also an interesting monograph, "Esquisse Historique sur les Bâtiments Universitaires," published by a committee of the students' association of the University of Liège.

As defined in a regulation of October 12, 1838, the university diplomas are of two orders—an honorary diploma delivered to persons (native or foreign) possessed of a doctor's degree, and who shall have given proof of superior ability, and a scientific diploma conferred upon examination. Subsequently (1853) a special scientific diploma carrying the degree of doctor was created in the interest of persons who, after having obtained the legal diploma of doctor, should apply themselves successfully to some scientific specialty. Subsequent legislation has not affected these diplomas.

The authority to confer the legal degrees, without which no one can enter upon professional life in Belgium, was relegated, as we have seen, to a jury constituted by the legislative bodies, and necessarily subject to political and official influences. The separation was emphasized in 1857, when the provisions relative to the examinations for degrees were detached from the law controlling superior instruction, and embodied in a distinct law. (Law May 17, 1857.)<sup>1</sup> This policy has detracted from the honors and dignities of the universities, and in the opinion of many has prevented that disinterested pursuit of knowledge which is essential to the highest results of university training. The advocates of a different policy gained a concession in 1876, when a tentative law was passed authorizing the universities (both State and free) to hold examinations for, and to confer degrees in like manner as the central jury, the decisions in all cases to be subject to confirmation by a State committee (commission d'entérinement). (Law of May 10, 1876.)

Three years later (1879) a special inquiry was instituted to determine the manner in which the universities fulfilled the trust thus reposed in them. The investigation was maintained for four years and meanwhile the experiment authorized in 1876 was prolonged. The report of the investigation was so satisfactory that in 1886 a bill was submitted to the Chamber of Deputies by M. Thonissen, minister of the interior and of public instruction, with a view to giving permanent effect to the tentative essay of 1876. After prolonged examination and discussion, the project was adopted February 27, 1890. Henceforth the degree-conferring authorities are the four universities and a central jury in which the State universities and the free universities have equal representation. The degrees specified in the law are of two orders, called, respectively, candidate and doctor.

The seven degrees of the inferior order are candidate in philosophy and letters; in law; in physical sciences; in medicine, surgery, and midwifery; notary; engineer. To each of the first five degrees enumerated corresponds a doctor's degree. Of the same order are the degree of pharmacist, civil engineer of mines, civil engineer. The degree of candidate in philosophy and letters, corresponding very nearly to the

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<sup>1</sup>See Recueil des lois et arrêtés relatifs à l'enseignement supérieur, pp. 145-159. L'enseignement public en Belgique, Histoire et exposé de la Législation par Émile Greyson, I. Enseignement supérieur, p. 29.

bachelor's degree in this country, is a prerequisite for the degree of candidate in law, and the degree of candidate in natural sciences, for that of candidate in medicine, surgery, and midwifery. Moreover no one can be admitted to the examinations for the lower degree in philosophy and letters or in natural sciences unless he produces the certificate of intermediate studies, showing that he has pursued in the one case a course of classical study for at least six years, in the other case the modern secondary course for at least five years. In the absence of such certificates the aspirant must submit to a preliminary examination. In general, the degree of candidate is a prerequisite for that of doctor of the same order.

The law fixes the conditions of admission to the examinations and the mode of conducting the same. A university may confer degrees only upon its own students. Before the degree conferred either by a university or the central jury can have any practical effect it must be confirmed by the special committee (*commission d'entérinement*), consisting of two councilors of the court of appeal (*cours de cassation*), two members of the Royal Academy of Medicine, two members of the section of sciences in the Royal Academy of Sciences, and two members of the section of fine arts, all appointed annually by royal decree.

The provisions of the new law as to the minimum number of years of study required of candidates for the several degrees, the number of examinations for each, and the subjects to be covered by each examination are a significant index of the standards of liberal and professional training in Belgium. The full consideration of these particulars belongs, however, rather to a discussion of higher education in and of itself considered than to a mere outline of the general system of education, such as is here attempted. The following tabulated particulars<sup>1</sup> complete the survey of the formal requirements for degrees:

Degrees.	Minimum number of years of study.	Number of examinations.	Fee for each examination.
Candidate in philosophy and letters.....	2	2	<i>a</i> \$10 or \$20
Doctor of philosophy and letters.....	2	1 or 2	10 or <i>b</i> 20
Candidate in law.....	1	1	20
Doctor of law.....	2	2 or 3	20
Candidate notary.....	3	3	20
Candidate in physical sciences and mathematics.....	2	1 or 2	10 or 20
Doctor of physical sciences and mathematics.....	2	1 or 2	10 or 20
Candidate in natural sciences.....	<i>c</i> 1 or 2	1 or 2	10 or <i>d</i> 20
Doctor of natural sciences.....	2	1 or 2	19 or <i>b</i> 21
Candidate in medicine, surgery, and midwifery.....	2	2	10 or 20
Doctor of medicine, surgery, and midwifery.....	3	3	10
Pharmacist.....	2	3	10
Candidate engineer.....	2	2	20
Civil engineer of mines.....	3	3	20
Civil engineer.....	3	3	20

*a* \$10 for aspirants for the doctors' degree; \$20 for aspirants for the legal degrees.

*b* For the single examination.

*c* For candidates who propose a subsequent course in medicine, one year of study required. Aspirants for the degree of doctor of natural sciences or degree of pharmacist must take two years' study.

*d* Aspirants for medical degrees.

<sup>1</sup> Compiled from *L'Enseignement supérieur*, par Émile Greyson, pp. 194-214, 226-228.



It is interesting to note that under the law of 1890 women are admitted to all academic degrees. By a provision of the previous law (May 20, 1876) the Government was authorized to determine the conditions under which women might practice medicine and pharmacy. They are, however, still denied admission to the bar.

*Scientific and literary academies, libraries, etc.*—The interests of higher education are promoted by the great number of learned societies in which Belgium abounds. Among these are the Royal Medical Academy at Brussels, which receives an annual grant of \$1,000 from the State, the Royal Academy of Science, Literature, and Art, also at Brussels, which receives annually \$3,000 from the State, and the Royal Museum at Brussels for the State collections in natural history. Belgium has also many public libraries, the chief of which is the Royal Library at Brussels. The public libraries of Ghent, Liège, and Louvain are connected with the respective universities. These libraries are administered in a very liberal spirit; they are open daily for consultation and as a rule volumes are lent at the discretion of the librarians.

The spirit and the conditions under which education is fostered in Belgium seem naturally to favor a movement like that of university extension. The University of Ghent has the credit of being the first in the Continent of Europe to enter into this movement. Liège and Brussels were not slow to follow, and the work is now maintained by an association in which all three of the universities are represented.

#### TECHNICAL AND INDUSTRIAL SCHOOLS.

The survey of the educational provision of Belgium would be incomplete without some notice of the special schools of art and industry (*enseignement spécial*) for which Belgium is justly distinguished. Provision for this order of training antedates the present Government, and became the subject of debate and legislation soon after its organization.

Industrial and technical schools are generally established by communal authorities or by private societies, but if subsidized by the State are under the general supervision of the minister of agriculture, of industry, and of public works. They are classified as follows:

Superior school of commerce at Antwerp (founded 1852); provincial school of Hainaut at Mons (1837); industrial schools; apprenticeship schools (*ateliers d'apprentissage*); professional schools and courses; schools of domestic economy, and housework for girls. The names of the first two and the last in the list sufficiently indicate their purpose. The industrial schools are characterized in official reports as schools intended "to give the workman scientific instruction which he is unable to obtain in the workshop; to procure for him the means of improving his material condition and of developing his intelligence; to lead him gradually away from the tyranny of routine, and to increase the economic value of his labor, and thus to enable him to contribute to increased production for his own good and for the national benefit."

These schools are supported mainly by Government and municipal grants. Tuition is free. The sessions are held generally in the evening and on Sunday morning, although several have also week day sessions. The courses are not uniform, being determined on the technical side by the requirements of local industries. The general course comprises the French or Flemish language according to the geographical location of the schools; mathematics in its applications to industry; physics, theoretical and applied; chemistry, general and applied; mechanics, hygiene, industrial economy, and drawing. The last named is the basis of the instruction.

Pupils are admitted generally at 14 years of age (12 years at least). They must know how to read and write and the four rules of arithmetic.

Apprenticeship schools (*ateliers d'apprentissage*) had their origin in Ghent, the first, established in 1817, having been intended for the benefit of indigent artisans. Founded at the time when the introduction of machinery was transforming all branches of the linen industry, the chief interest of the province, the new institution suggested the means of preparing artisans for the changed condition of their work. As the result of a special investigation authorized by the Government in 1840, apprenticeship schools were recognized as a legitimate object of communal and State support. They were brought under State inspection in 1849. It is in the Flemish provinces that this particular class of schools abounds, all but 1 of the 37 in operation in 1889 being distributed in these two divisions, i. e., 27 in West and 9 in East Flanders.

The professional (technical) schools and courses include a number of highly developed apprenticeship schools of weaving in the Flemish provinces, and similar schools established in other provinces in the interest of specific industries, as telegraphy, printing, tailoring, carpentry, etc. Technical schools for the benefit of young women have been established at Brussels, Antwerp, Mons, Verviers, and Ghent, and courses less extensive in a few small communes. These schools and courses combine an advanced course of instruction in the studies of the elementary schools, with special training in drawing and in some industry adapted to women, as decorative art, artificial flower work, cutting and fitting, etc.

The schools of household industry for young girls are intended especially to prepare the daughters of workmen to manage their homes with thrift, order, and a due regard for sanitary requirements. The first establishment of the kind was founded in 1872 by private initiative. The example was rapidly followed and the beneficial effects of the schools became so manifest that in 1887 the minister of public instruction adopted measures for the introduction of domestic economy and household work into the courses of all elementary schools for girls. An official circular was issued presenting a carefully elaborated programme for the guidance of elementary teachers in this part of their duties. This measure, it may be observed, is a deviation from the

general educational policy of Belgium. Although special stress is placed upon industrial and technical training, the tendency is to keep this distinct from general instruction.

With the exception of the practical courses in housework and sewing for girls, and elementary lessons in agriculture and practical applications in rural schools for boys, drawing is the only form of manual training included in the programme of elementary schools. The recent modifications in the modern course of the intermediate schools are all in the interests of general rather than of business or technical training. These are treated as specialties belonging to the period subsequent to school life. Moreover, the introduction of general courses of instruction into the industrial and technical schools emphasizes the importance which is attached to intellectual development and attainment as an equipment for ordinary life.

Possibly the explanation is to be found in the desire to reduce the rate of illiteracy prevailing in Belgium rather than in educational convictions.

Naturally this department of practical instruction forms a characteristic feature of the exposition at Antwerp,<sup>1</sup> now in progress. The following particulars of this exhibit, together with the official statistics, are from the report of the special agent of this Bureau.<sup>2</sup> They show very clearly the variety and scope of industrial training fostered by public agencies.

#### TYPICAL EXHIBITS OF SUBSIDIZED INDUSTRIAL SCHOOLS AT THE ANTWERP EXPOSITION.

Under the minister of agriculture, of industry, and of public works, industrial schools and special trade schools are maintained. A collective exhibit of work from these institutions formed much the greater part of the whole of the educational exhibition.

In the industrial schools for boys much attention is given to drawing and to simple operations in the working of wood and metals. In the industrial schools for girls great attention is given to the household arts, such as cooking, cleaning, knitting, sewing, and mending. In the trade schools attention is concentrated upon a single trade, although two or three allied trades may be taught in the same school. For boys, there are schools for clock and watch making, instrument making, machine construction, architecture and building, seamanship, fisheries, and tailoring. For girls, schools for millinery, flower making and dress-making.

The following details indicate the work carried on in individual schools:

*Elementary school rue Everaerts (Antwerp)*—Course in household economy.—In a space about 40 feet long and 30 feet wide a working

<sup>1</sup> August, 1894.

<sup>2</sup> Prof. Wellman Parks.



exhibit of this course was shown. It is to be taken as a sample of the 200 similar courses which are maintained in Belgium at an annual expense of about \$50,000, and which give instruction to about 10,000 pupils.

The room was fitted with cooking, laundry, and sewing appliances, and all classes of work were carried on by pupils from the school. On the walls of the room were cabinets containing samples of food elements, medicinal and other herbs, and useful articles, such as soaps and powders. The rest of the wall space was covered with charts showing methods of preparing food and of performing all household duties.

Instruction is given in the selection, preparation, and cooking of foods so that the pupils learn the relative value of the different foods, the best methods for using them, and how they should be combined to produce good and economical meals. The examples shown were of two dinners, each consisting of soup, meat, and two vegetables. One, which was for father, mother, and 5 children, cost 1.75 francs, or about 5 cents for each person. The other, which was for father, mother, and 8 children, cost 2.05 francs, or about 4 cents for each person.

In the class in cleaning are taught the best ways to clean wood, paint, tin, iron, silver, and clothing. The ironing class practices upon plain and fancy clothing and curtains ironed with and without starch. The quality of this work seems to be much better than that done by the regular laundresses of the country.

In sewing and mending much attention is given to plain sewing, patching, and darning. Some of the darning was exceptionally well done.

It is said that not enough time is devoted to these subjects to affect in any way the amount of work done in the ordinary subjects, unless by arousing the interest of the pupil it may cause her to carry on her other work more easily and successfully.

*School of seamanship.*—This institution is one in which much attention is given to the design, construction, and handling of vessels; also to the construction of harbors. The exhibit consisted principally of models of boats and ship details, of drawings, and of maps showing the location of the lights and channels of the North Sea and the ports on its borders.

#### BLANKENBERGH.

*Fisheries trade school.*—Of all the trade schools subsidized by the Government this one seemed most novel. Its exhibit consisted of charts and relief maps showing the shoals and fishing grounds of the North Sea, of models of fishing boats, and of examples of the various implements used in the fisheries for catching and curing fish. The course of instruction covers seamanship, the natural history of fish, their haunts, the methods of catching and preserving fish, and the uses which can be made of them.

## BRUSSELS.

*St. Luke's School*, a church trade school, made an extensive exhibit of free-hand and mechanical drawings. The subjects pertained chiefly to church building and decoration.

*State trade schools*.—The school for the clock and watch making trade made an exhibit of models used in the school and of pupils' work. Among the most interesting models were four showing the principal escapements used in watch construction. A silver watch made by a second-year pupil and valued at \$10, also a gold watch by a third-year pupil and valued at about \$240 were the most attractive examples of pupils' work.

*Trade schools for girls*.—The institutions at Brussels for millinery, flower making, lace making, and dressmaking had large, well arranged, and attractive exhibits. The work from the lace-makers' school was of the greatest interest and consisted of very beautiful handkerchiefs and lace trimmings. The work from the flower-makers' school was installed in a case with mirrors below and on two sides. The few bunches of lilacs, hyacinths, and jonquils, which were placed in this case, produced a pleasing effect. The work from the embroidery and dressmaking schools was very good.

## GHENT.

*St. Luke's School*, like that of Brussels, is a trade school. Its large and comprehensive exhibit included furniture and furniture designs, free-hand drawing, illuminated work, modeling, lithographing, wood and stone carving, and decorative iron forging. As might be expected, the church work was better than the lay work. The free-hand drawing of church decoration showed more strength whether the subject were figure or architectural detail than that pertaining to domestic life or dwelling houses.

## MONS.

*Lace trade school*.—The exhibit from this school was beside the exhibit from the lace school of Brussels, and it was difficult to decide which was the finest, as every piece of lace shown by either seemed to be practically perfect. Mons exhibited more lace for dress trimmings, excellent both as regards design and execution. The exhibit of these schools was composed largely of drawings, except as described above, under Antwerp, Blankenbeigh, Brussels, and Mons. These drawings were arranged by years, and one could easily see the effect of the instruction and practice, as the quality of the work improved very rapidly in the progress from the lower to the upper classes.

One piece of work from Schaerbeek attracted attention by its peculiar excellence. It was an exercise in the adaptation of natural forms to industrial decoration, and consisted of a series of designs in which the sycamore leaf was the only element. These designs were for painted and carved friezes, ceramics, plates, tiles, hinges, and roof crests. Each one was simple and strong.

## BROTHERS OF CHARITY.

This organization, which maintains institutions in Belgium, Canada, England, and the United States, filled a large space with exhibits sent from its various institutions. Among other things were maps and books used in instructing the blind, photographs showing the deaf-mute classes, charts used in the fishery trade school, and work done in the industrial schools.

*Statistics of industrial courses and schools for boys, 1892.*

[A franc = 19.3 cents, or approximately 5 francs to \$1.]

[illegible]

*Industrial and trade schools for girls.*

[illegible]



In addition to the above statistics, the annual statement of the minister of the interior and of public instruction (1891) shows for the Superior School of Commerce at Antwerp an attendance of 141 pupils in 1890 and an income of 77,943 francs (\$15,588), of which 56.7 per cent came from the State, and from the municipality 18 per cent; the remainder was from balances of the previous year and from private sources.

The provincial School of Mines of Hainaut had an attendance of 91 pupils and an income of 62,452 francs (\$12,490), of which the Staté furnished 32 per cent, the province 43 per cent, and the commune (Mons) 15 per cent, leaving a small balance from other sources. The 37 apprenticeship schools enrolled 1,020 pupils (938 boys, 82 girls) and had an income of 68,472 francs (\$13,694) derived as follows: From the State, 54 per cent; provinces, 14.8; communes, 27; other sources, 4.2 per cent.

#### APPENDIX A.

CITATION FROM "L'INSTRUCTION DU PEUPLE," BY ÉMILE DE LAVELEYE.

[Published 1872.]

#### BELGIUM.

During the Middle Ages primary instruction had fuller development in Flanders than elsewhere, because there industry and agriculture had enriched the classes who live by work.

In 1192 the citizens of Gand secured the sanction of their count to a measure which stipulated that "whoever had the will, capacity, and means for the work, should have full right to open a school in the city of Gand without opposition from any person." This, which might be called "liberty of instruction" at that early period, was proclaimed also at Ypres at the beginning of the twelfth century. At that time instruction had already extended into the country, since in many villages local dramatic societies were organized to compose and represent the mysteries and dramas.

"There are in this country," said Guichardin, who lived in Belgium for some time, "a great number of persons learned and wise in all knowledge and sciences, and the greater part of the people know something of grammar; even the villagers are able to read and write."

During the reunion of Belgium with Holland the Government of King William exerted itself to extend instruction into Belgium. The application of the law and the methods of Holland, which were excellent, was of great advantage.

Unfortunately, after the revolution of 1830 the communes, left to themselves, nearly everywhere abandoned the work so happily commenced—new proof that primary education can not be confided exclusively to local administration without compromising and ruining it. The majority of the teachers were reduced to want; nearly all sought some other means of subsistence. Only those remained who were not qualified for any other profession. To a blind reaction against the system of Holland, which resulted in the closing of the best schools, succeeded an indifference not less baneful which prevented the location of new schools. The intervention of the central power was necessary to arrest the backward movement.

The communal law of 1836, and following this, the law of 1842, organizing primary instruction, started a progressive movement which has never since ceased. The law

of 1842 has suffered no modification since its origin; it still actually controls popular instruction in Belgium. It is then important to make it known. In its principal provisions this law recalls the French law of 1833. It determines at the outset that in each commune at least one primary school shall be established in an accessible place. However, the commune is not obliged to establish a school at its own expense when its educational needs are fully met by private schools.

A commune is also authorized to adopt one or more private schools, fulfilling the legal conditions required in schools which take the place of communal schools. The provincial deputation decides this, save that appeal may be made to the King.

All indigent children have the right to gratuitous instruction.

Primary instruction comprises, as obligatory subjects, religion and morals, reading, writing, the legal systems of weights and measures, elements of arithmetic, and, according to the demands of the localities, the elements of the French language, the Flemish, or the German.

Instruction in religion and morals is given under the direction of the ministers of the denomination to which the majority of the pupils of the school belong. Children who do not belong to the communion of the majority are excused from taking part in this instruction.

The control of the school appertains to the local authorities, save in respect to instruction in religion and morals; this is confided to the ministers of religion. A double system of inspection is established—lay inspection and ecclesiastical—exercised the one by cantonal and provincial inspectors, the other by diocesan inspectors; the former appointed by the Government, the latter by the bishops.

The books intended for primary instruction in the schools under inspection must be approved by the Government, excepting those relating to religion and morals. These are approved by the ecclesiastical authorities only.

The communal council appoints the teacher. Choice must be made among candidates who, for two years at least, have attended with good results the courses of normal schools under inspection. A candidate who has not a diploma can only be appointed with the consent of the central authority.

The council may suspend a teacher for three months at most. The Government decides finally as to his reinstatement or dismissal. The teacher has always the right to a hearing. The provincial inspectors are convoked every three years in a central commission under the presidency of the minister of the interior. Each provincial inspector submits to this central commission, for its consideration, a report upon the schools of his district. The commission suggests the necessary modifications and improvements. The different religious denominations may be represented in the central commission by a delegate having a voice in the deliberations.

At least once every three months the civil cantonal inspectors must call a conference of the teachers of their respective districts. Here questions of pedagogy are considered.

Fundamentally, all the costs of primary instruction are at the charge of the commune. Only when the appropriation of the commune is equal to the product of 2 centimes added to the principal of the direct taxes may the province intervene; when the province has made an equal appropriation, the State in its turn may intervene.

The teacher must have an annual salary of not less than 200 francs (to-day 850) and an allowance for the poor children instructed, besides a house or an indemnity in lieu of lodging.

Such in sum is the organic law of 1842. Very vigorously opposed in Parliament at first by the Liberals, it has ever since been attacked by the most zealous members of this party. They assert that this law permits the priest to enter the school without a shadow of authority.

In Belgium, it is said, the state and the church are completely separated; it is then against the spirit of the constitution to accord such powers to the ministers of religion who are entirely independent of the lay authorities. This system may be

possible elsewhere, in France, for example, where the State intervenes in the appointment of prelates. In Belgium, where the church has no union with the state, it can not be tolerated. Moreover, the church naturally desires to see denominational schools replace the communal schools. It does not love secular instruction. Every day gives proof that when it can destroy this it does not hesitate to do so. If the church has not declared war against the communal primary school, this is simply because it really has the school in its own hand.

The Belgian constitution formulates so clearly the principle of the equality of religious denominations that it was impossible for the law of 1842 to violate the same directly. The primary school is therefore in principle a mixed school, where children of all religious denominations are freely admitted; but by virtue of article 6, which confides religious instruction to the teacher, and of article 7, which gives the clergy the right to inspect the school at all times with authority, the communal school is in reality a Catholic school. It would have been easy to have avoided this difficulty. It would have sufficed to confide religious instruction to the clergy, the only persons competent in this subject, as was done by the Hollandish law, and by the project of law prepared under the ministry of M. de Theux in Belgium in 1833.

But would the clergy have been content with such provisions? Would they have accorded their support to the communal school if they had not the power to supervise and direct it? This is not probable. Would it have been possible to organize secular instruction in Belgium after the precedent afforded by Holland, despite the resistance of the clergy, and to bring the children under its influence despite their hostility? Mr. J. B. Northomb<sup>1</sup> did not think so, and he therefore drew up the law of 1842 as a compromise measure between the demands of the Catholic party and of the Liberal party. The Belgian law of 1842 is inferior to the Netherland law of 1857 in other respects also. The former went no further than to require one school for each commune.

The Netherland law intended that the number of schools should be proportioned to the needs of the population, and to the central authority was given the power to force the commune to fulfill its obligations in this respect. The law of 1842 has not determined with sufficient precision the proportion which each of the public powers charged with the support of public instruction should contribute toward the total expense. Different interpretations have been put upon these provisions by the communes and by the State. Nevertheless, under the law of 1842 much has been done for the development of primary instruction. (*L'Instruction du peuple*, pp. 177-180.)

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## APPENDIX B.

### PRIMARY INSTRUCTION IN BELGIUM.

#### PRIMARY COMMUNAL SCHOOLS.

#### OBLIGATORY PROGRAMME OF STUDIES AND OFFICIAL DIRECTIONS RELATIVE THERETO.

[Law of 1879, article 5.]

Primary education comprises morals, reading, writing, elements of arithmetic, system of weights and measures, elements of the French, Flemish, and German languages (according to locality), geography, Belgian history, elements of drawing, knowledge of geometric forms, elements of natural sciences, gymnastics, singing, and needlework for girls.

Other branches may be added in localities where it is deemed advisable. A royal decree is to indicate the additional branches, as well as the reason for such increase of the list for the commune.

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<sup>1</sup> Chairman of the committee appointed to draft provisions acceptable to the opposing parties.



Text-books are to be examined by the council appointed to judge of such matters (*conseil de perfectionnement*), then to be approved by the Government.

The teacher must not neglect any opportunity of inspiring the pupils with a love of country and the national institutions.

The teacher is to abstain at all times from any remarks against the religious belief of the families whose children are confided to his care.

#### GENERAL RULES.

[Decree of August 16, 1879.]

The instructor is to have constant care for the physical, intellectual, and moral education of the pupils under his charge. He is to see that moral duties are understood, loved, and practiced. He is to watch carefully that pupils observe all rules of propriety at all times.

Primary instruction covers necessarily the branches mentioned in the first paragraph of article 5 of the law of July 1, 1879.

Only those books may be used which have been approved of as in accordance with the law.

As regards methods of instruction, the teacher must conform to the regulations given by the minister of public instruction.

The distribution of work in the various branches of instruction is to be arranged by the head teacher, countersigned (*visé*) by the cantonal inspector, then ordered (or published) by the municipal authorities. This programme is to be placed on the wall of the schoolroom.

The head teacher and assistants are forbidden to make any changes in the programme.

Both principal and assistants are to keep a daily record of the instruction in each class, the quality of recitations, etc.

The assistants and employees about the building are to be under the orders of the head teacher or whoever takes his place.

The school yard is to be opened at least a quarter of an hour before the recitations commence.

The head teacher and the assistants are to watch over the pupils when they enter and leave the schoolroom and during recess. \* \* \*

Head teachers and assistants must not attend to anything else during the recitations than the instruction of their pupils.

The classification of pupils in the different divisions belongs to the head teacher, or in certain cases it may be referred to the cantonal inspector.

The head teacher is to keep watch over the pupils, so that they do not waste their time.

The head teacher and assistants are forbidden to show any preference for any bright pupil to the neglect of others, either by reason of desiring to make a fine effect at the examinations or for any reason whatsoever. The instruction should be distributed equally among the pupils.

The head teacher is to see that proper care is taken of the building and its appurtenances. He is to have a care that nothing is allowed which might injuriously affect the health of the pupils. He is to see that the schoolroom is always neat and that it is cleaned at least once a day. The room should be ventilated before pupils enter and after they leave.

In localities where the physicians of the poor receive a salary from the board of health (*bureau de bienfaisance*) they are expected to visit the public schools at least once a month.

At the close of the visit they are to report the sanitary condition of the pupils to the proper authorities (*collège échevinal*).

Any pupils attacked by a contagious disease are to be sent home, and they can not enter the schoolroom again until a certificate, stating that they are entirely cured, has been obtained from the physician.

## PROGRAMME OF EDUCATION.

The following from the circular, explanatory of the programme, shows the ideal of popular education contemplated by the Liberal party.

"If it is important that the programme should neither alarm nor discourage anyone, it is of supreme necessity that it should offer serious obstacles to routine and become an instrument of progress; that it should compel the teacher to awaken in his pupils a spirit of observation, experiment, and reflection; that instead of habituating him to the disastrous methods of verbalism it should urge him to labor for the sound development of the faculties. It should constantly be a reminder to him that his last as well as his first daily duty is to make a thorough preparation of his lessons—that is to say, to find out the surest, shortest, and most attractive way of making his instruction reach the minds and hearts of his pupils.

"The programme ought to fulfill another important condition. It should stimulate the teachers in small communes, while it responds to more general requirements. It should arouse them and encourage them to lead their pupils as far as the extreme limits of primary education properly so called will permit. But it should not become an obstacle in the path of improvement in larger communes which may wish to extend the education of their children beyond the ordinary sphere. In order to comply with these different principles the plan of study has been divided into two great sections—the programme of the primary school proper and of the superior primary school.

"The programme of the primary school proper is obligatory throughout and embraces three successive courses or grades of two years or more each. In schools where the attendance is regular the first or elementary grade will include, as a rule, children of from 6 to 8 years of age; the second, children of 8 to 10; and the third, those from 10 to 12 years of age. It is not the intention of the Government to prescribe in an absolute way the precise time to be devoted to studying the subjects assigned to each grade. It contents itself with requiring that these three great stages of school life should be clearly marked in each school, and it is also convinced that the majority of children will be able to pass them without too much effort between the ages of 6 and 12, and very easily between 6 and 13 or 6 and 14 years of age."

It belongs to the inspectors, the communal governments, and the teachers to adapt the programme to the needs of each locality by distributing the subjects of study among the different school years and divisions, and by selecting the points which will only be treated summarily and those which, according to the longer or shorter time at the disposal of the teachers, can be studied more deeply.

Besides the obligatory subjects enumerated in article 5 of the law of July 1, 1879, the programme of primary schools includes two elective studies: a language (French for Flemish or German localities, or German for Walloon districts) and elementary notions of agriculture, horticulture, and arboriculture. Instructions in these two branches will be organized in accordance with the regulations of the royal decree of April 25, 1880.

The superior primary school can only be established by virtue of the same decree. It will be opened for children of at least twelve years of age who have finished the studies of the third grade of the primary school. Instruction in each of these schools must be given by one, and, if necessary, two, special teachers. The superior primary schools offer great advantages to the large rural or industrial communes which have no secondary State schools. They will continue the general education of the young, furnish preparatory training for an agricultural or professional career, and diffuse among the population, by an extension of knowledge, a taste for observation and for intellectual pleasures.

Communes which can not organize a complete superior primary school may add to the obligatory programme of the ordinary primary school one or more of the subjects of study of the superior primary school, in accordance with the regulations of the above-mentioned royal decree, such studies to be pursued only by pupils of at least

12 years of age. In the interest of the scholars care must be taken that the number of studies thus added shall be as restricted as possible.

As formulated, the programme of primary education, with the extensions it may receive, embraces four concentric circles gradually widening, each of which embraces all the subjects of study. These four progressive courses, the first three of which are obligatory, are characterized by being at once independent and connected, each forming a whole in itself and yet being complemented by the others. The system adopted, so eminently suited to the simultaneous development of all the faculties of a child, also has the advantage of corresponding in its first three courses to the present classification of scholars into the lower, middle, and superior divisions, and is adapted at the same time to the needs of children who leave school without having finished a full course of primary studies.

By offering all the subjects of study in each grade, according to the measure of the intellectual powers of the children, the latter are enabled to reap from their attendance at school much more solid advantages than could be gained from instruction in fragmentary courses graded in successive stages.

*Instruction in morals.*—The official programme determines the office of the teacher with regard to moral instruction, as follows:

Moral instruction is the noblest and most important work of the school, and the teacher must devote all his energies to it. He is to employ all the resources of his mind and heart in making easy to his pupils the practice of their duties to themselves, their parents, their superiors, their equals, and their country.

Instruction in duty to God belongs more especially to the different religious beliefs, but by making use of an idea common to all of them without entering on dogmatic ground the teacher can find occasion to talk to his pupils about the Deity, the soul, and those great moral and Christian truths which, to the honor of humanity, have progressively become the domain of all religions and the inheritance of all civilized nations. (Ministerial circular of July 17, 1879.)

It is principally by his administration of the school that the teacher will inculcate morality. The dignity of his acts and language, his respect for justice, his sincere regard for his pupils, will enable him to establish a wise discipline and assure him the respect and love of his scholars. Thus holding the position of a good father of a family he will endeavor to give instruction which, like that of the domestic hearth, breathes simplicity, goodness, and virtue.

He will take advantage of all the school exercises, recreations, sports, and promenades, and the thousand incidents of school life to enlighten the consciences of his pupils, strengthen their good and check their evil propensities, and exercise and cultivate their wills in good directions. He will endeavor to inspire respect for truth and justice, to develop a spirit of charity and tolerance, and a love of work and economy.

He will seek opportunities for rendering his pupils sensible to the beautiful in nature, in art, and in a moral life, thus enabling them to profit by the influence which esthetic culture exercises on the education of the feelings.

The character of the primary school is opposed to providing for it a course of moral didactics made in accordance with a plan devised beforehand. What a child needs is the good example of his teacher and of his comrades, moral instruction in action, a spontaneous lesson which comes now from something he reads and now from some aspect of nature, at one time from a passage of history and at another from a fable.

There is no objection to giving certain lessons at fixed hours every week on some story, fable, or historical or literary extract. The teacher may make the selections from the reader or classical manual, and arrange them so as to present in a concrete and entertaining form the principal moral duties of a child. Short pieces of poetry, selected with discretion, offer valuable resources. They induce a love of nature, strengthen the patriotic sentiment, and refine the moral sense.



*Schedule of work.*—The number of hours of lessons and other exercises a week is as follows: In the first or elementary grade, twenty-five hours; in the second grade, twenty-eight hours; in the third grade, twenty-eight hours; and in the superior primary schools, thirty hours.

*Examinations.*—Competitive examinations take place annually for pupils of the superior division of primary schools.

#### TEACHING GEOMETRICAL FORMS IN THE PRIMARY SCHOOL.

The Belgian primary school attributes much importance to the study of geometrical forms. This branch furnishes excellent means for intellectual development. It lays the foundation of instruction in drawing and forms an admirable preparation for different trades (carpentry, masonry, locksmithing, etc.).

The inspectors must be careful to see that the instruction is essentially practical and given by inspection (i. e., from objects) only, that scientific demonstrations are prohibited, and that the teacher is sparing in definitions. It is enough for the pupils to recognize the forms by perceiving their relations, and to be able to reproduce them in a drawing and by one of the methods borrowed from the Fröbel system (by bending, constructing figures of pieces of wood, etc.).

Our method, therefore, is not that of scientific geometry, with its theorems, corollaries, and problems. It is entirely based on inspection and practice, and is only the natural development of what takes place in kindergarten.

The essential point is that pupils know how to draw or construct the geometrical forms and learn their leading properties, with the measure of their areas and volumes.

#### SCHOOL HYGIENE.

The inspection of school hygiene under the central administration of the department of public instruction includes the three degrees of education. As far as primary education is concerned the inspectors are charged with the examination of building sites, plans of construction and of improvements and extensions of school buildings. Their main duty is to see that the approved proposals are in accordance with the just demands of hygiene and pedagogy. They must also be very particular to insist that the designs for schools conform to the requirements of simplicity and good taste. Since its organization the bureau of inspection has brought about great reduction in expenses by opposing extravagance in façades and in general furnishing.

It has drawn up a programme for the construction of normal schools which has been adopted by the department. This programme has facilitated the work of the architects and has enabled them to effect very considerable savings in making new estimates and plans.

The examination of school designs is not, however, the only mission of the inspectors of school hygiene.

When there are different opinions as to the best sites to choose for schools, or when improvements or extensions of existing buildings are under discussion, they visit the spots designated, make examinations, and report to the department for its guidance.

It is also the duty of the inspection bureau, so far as the school is concerned, to bring about the harmonious action of the physical, intellectual, and moral nature of the children. It is important that the impulse to study in all school grades should be regulated in accordance with the laws of human nature, by applying the principles of hygiene, which require an equilibrium of the physical forces and the intellectual faculties.

A programme based on these principles is vast. It can only be prepared by methodically correlating observations made in all parts of the country. To accomplish this researches of two kinds are necessary. The hygienic situation of all school buildings must be ascertained, so as to apply to them the improvements which may be found necessary, and, what is of no less importance, the inspectors must prepare a system of regular medical inspection of all educational institutions in the whole realm. At present this can only be done in the larger cities.

## APPENDIX C.

## LAW CONTROLLING PRIMARY INSTRUCTION.

[September 20, 1884.]

Every commune must have at least one communal school, situated in an accessible place.

The commune may adopt one or more private schools. In this case the King, upon the advice of the "permanent committee," may exempt the commune from the obligation to maintain a communal school. This dispensation can not be accorded if 20 heads of families having children of school age demand the creation or the maintenance of a school for the instruction of their children and the "permanent committee" concurs in this demand.

In case of necessity two or more communes, upon authority from the King, may unite to found and maintain a school. (Art. 1.)

Communal primary schools are directed by the communes.

The number of the schools and of the teachers is determined by the communal council according to the needs of the locality. The council also controls everything relating to the establishment and organization of infant schools (*écoles gardiennes*) and of schools for adults. (Art. 2.)

The children of poor parents receive gratuitous instruction. The communes must see that all those who do not attend uninspected private schools are provided with instruction either in a communal or adopted school.

The communal council, on communication with the board of charities, draws up every year a list of poor children receiving gratuitous instruction in the communal or adopted schools and determines the amount of pay due the teachers of those schools for each scholar receiving such instruction. This list and the assessment of the amount due is submitted for approval to the committee, subject to appeal to the King. The committee also determine, under appeal to the King, the proportion to be paid by the board of charities for the education of poor children, and the proportion so assigned is included in the appropriation for the board. (Art. 3.)

Primary instruction comprises as obligatory branches, reading, writing, elements of arithmetic, the legal system of weights and measures, the elements of the French language, of the Flemish or the German, according to local requirements; geography, history of Belgium, elements of drawing, singing, and gymnastics. Moreover, it comprises needlework for girls, and for boys in the rural districts notions of agriculture.

Communes have the right to extend the programme as may be possible or desirable.

The communes may inscribe religious and moral instruction at the head of the curriculum of all or some of their elementary schools. This instruction is given at the commencement or at the end of the school hours. Children at the request of their parents, are excused from attending such instruction.

(a) In the case of a commune in which 20 heads of families having children of school age ask that their children shall be exempted from assisting at religious instruction, the King can, at the request of the parents, oblige such commune to organize, for the use of these children, one or more special classes.

(b) If, in spite of the request of 20 heads of families having children of school age, the commune refuse to inscribe the teaching of their religion in the school curriculum or hinder such instruction being given by the ministers of their religion or by persons approved of by these latter, the Government can, at the request of the parents, adopt one or more private schools, as may be requisite, provided they meet the conditions prescribed for adoption by the commune. (Art. 4.)

Teachers must show an equal solicitude for the education and instruction of the children under their charge. They are to neglect no opportunity to inspire in their pupils the sentiments of duty, love of country, respect for national institutions, and

attachment to constitutional liberty. They must abstain from any attack upon the religious beliefs of the families whose children are intrusted to them. (Art. 5.)

The communes bear the expenses of primary instruction in the communal schools, the provinces and the communes to an extent not less than 2 centimes on the amount of the direct tax.

A commune can not obtain subsidies from the State or province for primary instruction unless it contributes at least 4 centimes additional to the direct tax and carries out the present law in all points. Each year to the proposed estimate there must be annexed a detailed account of the application of the funds of the preceding year, including those of the State, province, and commune. (Art. 6.)

The communal council has the right of appointing, of suspending, of placing en disponibilité (out of active service, but drawing pay), and of revoking the appointments of teachers. At the same time, the teacher's appointment can not be canceled without the approval of the permanent deputation.

The council and the teacher may appeal to the King. The same rules apply to all suspension for more than a month and to all suspension with stoppage of pay or upon reduced pay. Suspension once decreed by the communal council can not be renewed by it on the same facts nor exceed six months' duration. The King, in accord with the advice of the permanent deputation, both the teacher and the communal council being heard, may suspend or revoke a teacher's appointment. Subject to the same advice, he may place a teacher en disponibilité.

The salary of an unattached teacher is paid by the commune if the order depriving him of service is issued by the communal council; by the State if the order is issued by the King. No place may remain more than a month without a teacher. The Collège Échevinat designates the substitute. The council fixes the minimum of teachers' salaries. The salary can not be less than 1,000 francs (\$200) for assistant teachers and 1,200 francs (\$240) for teachers. The teacher has, besides this, the right to be lodged or to receive an allowance for house rent.

The communal council can place a teacher on the unattached list, and so keep him from active employment, in which case he will receive waiting pay, under conditions which will be determined by royal decree. The amount can not be less than half his salary nor less than 750 francs. This pay will be furnished by the State, the province, and the commune, in the proportions fixed by article 5 of the law of May 16, 1876. \* \* \* (Art. 7.)

The communal schoolmasters are chosen from among those Belgians, either by birth or naturalization, who have gained the diploma of an elementary teacher after being trained in a public normal school, or who have passed an examination after having attended lectures during at least two years, or who have gained a diploma for secondary teaching (enseignement moyen) of the second degree. They can also be selected from among those persons who have successfully passed the teachers' examination before a jury appointed by the Government. (Art. 8.)

A private school can not be adopted unless it fulfills the following conditions:

(1) The school must be established in a suitable building.

(2) At least half the number of teachers must have received a diploma or have passed the examination for the male or female teachers; but the minister is at liberty to dispense with this condition during the two years following the promulgation of this law. Those who have had charge of communal schools prior to the present law are exempt from examination.

(3) Should religious instruction form part of the curriculum, such instruction shall be given at the beginning or at the end of the school hours. Children, on the application of their parents, shall be exempted from attending religious instruction.

(4) The curriculum shall comprise the subjects mentioned in section 1 of article 4 of the law.

(5) The adopted school must accept State inspection.

(6) It must admit poor children without requiring other payment than that prescribed in article 3 of the law.



(7) The number of hours of school attendance shall not be less than twenty per week, without including the time devoted to teaching of religion and morals; after deducting the time employed on needlework, this number shall not be less than sixteen. \* \* \* (Art. 9.)

Communal and adopted schools are subject to inspection by the State; this can not extend to the course in religion and morals.

In each province there must be one or more principal inspectors, and in each district under a principal inspector several cantonal inspectors. Once a year the cantonal inspector must visit all the schools of his district. Once, at least, every three months he must call the teachers of his district together for a conference, and must submit to the principal inspector a report upon the state of primary instruction in the communes under his charge. Once a year each principal inspector must preside over one of the teachers' conferences, and once in two years, at least, must visit each school of his province. He must submit an annual report to the minister upon the state of primary instruction in his province. \* \* \* (Art. 10.)

The State, the provinces, and the communes may establish normal schools. (Art. 11.)

The organization of normal schools belonging to the State is regulated by the Government. A ministerial decree insures absolute liberty of conscience to students of the normal school. (Art. 12.)

The provincial and communal normal school, as well as private schools, may receive State aid, provided they are subject to inspection. \* \* \* (Art. 13.)

The communal inspectors and teachers and the directors, professors, and teachers of State normal schools must take the oath prescribed by article 2 of the decree of July 20, 1831. (Art. 14.)

A report on the condition of primary instruction shall be presented to the legislature by the Government every three years. (Art. 15.)

Article 16 specifies the laws repealed or modified by the present law.

Persons who obtained the diploma of primary teacher from a private normal school between the adoption and the repeal of the law of July 1, 1879, may receive the appointment of communal teacher on condition of obtaining a confirmation of such diploma from a board organized in accordance with article 8.

It shall be the duty of the board to see that the private normal school giving the diploma is organized so as to train teachers capable of keeping communal primary schools established in conformity with the present law. The board may make the confirmation subject to a complementary examination on certain matters to be designated by it. In such case the teacher who has a diploma shall have one year to prepare for the examination. He may meanwhile exercise the functions of a communal teacher provisionally. (Art. 17.)



## CHAPTER IV.

### ELEMENTARY EDUCATION.

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#### GREAT BRITAIN.

*England and Wales.*—Population 29,731,100, estimated 1893.

*School attendance.*—From the report of the committee of council on education (education department) for 1893 it appears that the State-aided elementary schools had an enrollment for the year ending August 31, 1893, of 5,126,373 children, or 17 per cent of the population (1893). The daily average attendance was 4,100,030 (i. e., 2,137,487 boys and 1,962,543 girls), or 82 per cent of the enrollment. The average attendance at evening schools was 81,068.

As compared with the preceding year there was a gain of 2.38 per cent in day-school enrollment and 5.92 per cent in average attendance. It is noted that the gain in both items is nearly as great among the older children—i. e., those above 7 years of age—as in those below 7. To quote the report:

The number of infants on the registers has gone up from 1,764,930 to 1,813,992, an increase of 49,062 (2.83 per cent), and that of older children from 3,242,049 to 3,312,381, an increase of 70,332 (2.17 per cent). The number of infants in average attendance has similarly risen from 1,183,830 to 1,278,798, an increase of 94,968 (8.02 per cent), and that of older children in average attendance from 2,686,944 to 2,821,232, an increase of 134,288 (5 per cent).

This result is attributed chiefly to the practical effect of the law of 1891 in bringing about the abolition or substantial reduction of school fees. On the registers of the schools actually inspected during the year under review there were 4,236,867 free pupils, as against 589,506 paying fees. Other causes for the improved attendance are the growing sense of the importance of education among parents and school managers, and also, paradoxical as it may seem, the stagnation of trade during the year. Experience in England, as in the United States, shows that dull trade makes a full school and brisk trade an empty one. In the absence of temptation to send their children into employment on the earliest possible opportunity parents are content to allow them to stay on at school, and especially so now that no payment is necessarily demanded from them. In illustration of this fact the report



states that an investigation into the effect of the dispute in the coal trade of last autumn upon the school attendance in the districts affected showed a distinct increase in the attendance of children, during the weeks for which the dispute lasted, over the normal attendance for the year.

*Classification of schools and relative attendance.*—The schools included in the report are board schools and private (voluntary) schools, chiefly denominational. The former are established and conducted by elected boards and maintained by local taxes (rates) and the Government grant, with fees in certain cases. They numbered 4,904 and comprised 41 per cent of the pupils in average attendance upon elementary schools. The voluntary schools, which are established and controlled by private individuals, churches, or associations, and maintained by the Government grant, private subscriptions, endowments, and fees in some cases, numbered 14,673 and comprised 59 per cent of the average attendance.

*Teaching force.*—The elementary schools employed 101,751 teachers, of whom 49,340 had Government certificates, 25,123 were uncertificated assistants, and 27,288 were pupil teachers. The proportion of women teachers was 59 per cent in the first class specified, and 80 per cent in each of the other two classes.

The average salaries of certificated teachers were, for men £121 15s. 2d. (\$592.44), and for women £79 4s. (\$385.39). About 31 per cent of the certificated masters and 17 per cent of the certificated mistresses are also provided with free residences. The training colleges supply the greater proportion of certificated teachers to the service. The 44 boarding colleges were attended in 1893 by 3,409 students and the 14 day training colleges by 564 students. These colleges, like the elementary schools, are supported in part by Government appropriations.

*Inspection.*—In accordance with the law of 1870 and subsequent modifying laws under which the system of elementary education is administered, local boards and managers have full control of elementary schools. In order, however, to secure a share in the Government grant they must fulfill certain conditions as to equipments and staff, duration of school year, curricula, etc.<sup>1</sup>

The Government grant is allowed solely for instruction in secular subjects under the conditions specified in the law and departmental regulations. Religious exercises in board schools must be strictly undenominational; in private schools sectarian instruction must not be forced upon any pupil.

The Government maintains an inspection over the schools to determine the manner in which its requirements are met. For the purposes of this inspection the country is divided into 10 districts, each under a chief inspector, whose duties are of a general nature, advisory and

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<sup>1</sup>For detailed particulars see the Commissioner's Report for 1888-89, vol. 1, pp. 97-101.

judicial, with the specific obligation to present an annual report to the department based upon the reports of the inspectors. The latter number at present 91, which, with 53 subinspectors and 160 inspectors' assistants, gives a total of 316 officials engaged in the work.

In the inspectors' reports the schools are classified as infant schools and classes; i. e., for children under 7 years of age and schools for older pupils, i. e., 7 to 14. In the former the Government grant is allowed entirely on the basis of average attendance, and consists of a fixed portion at the rate of 7s. or 9s. per capita and a variable grant of 2s., 4s., or 6s. per capita. The highest fixed rate is allowed only when the school is held in a room specially furnished for the instruction of infants. The rate of the variable grant allowed is determined by the report as to general conditions; it may be withheld altogether. For the year under review only 38 schools out of 7,140 and 1,175 classes out of 5,755 were recommended for the lower fixed rate. The showing as to the variable grant indicates that in general the larger the infant school the greater its merit. Extra grants are allowed in the infant schools for needlework, drawing, and singing. The total rate per capita allowed was 15s. 7d. and the total payment £994,009 (\$4,836,848).

The grants to older schools are made up as follows:

	s.	d.	s.	d.
Principal grant.....	12	6 or 14	0	
Grant for discipline and organization.....	1	0 or 1	6	
Grant for needlework on account of girls.....	1	0		
Grant for singing.....	0	6 or 1	0	
Grant for class subject.....	1	0 or 2	0	
Grant for specific subjects.....	2	0 or 3	0	

All the foregoing are reckoned on the average attendance, excepting the grant for needlework, which is reckoned on the average attendance of girls only, and the grant for specific subjects, which is paid for each individual passing examination in the same. The total grant allowed in schools for older scholars was at the rate of 19s. 2½d. per capita of average attendance, and yielded the sum of £2,734,618 (\$13,306,651).

Besides the obligatory subjects of instruction, i. e., reading, writing, arithmetic, needlework for girls, and drawing for boys, additional class subjects were maintained in 95 per cent of the schools. Not more than two class subjects are allowed at a time. The reports show that English is the preferred subject and geography second. Hereafter the department will not recognize any school that does not maintain at least one class subject.

Among interesting particulars brought out by the inspectors is the marked increase in the number of schools maintaining savings banks. The returns show that savings were received in 8,548 schools, an increase of 2,165 over the previous year. This progress is attributed to a disposition on the part of parents to invest week by week the small sums formerly paid in school fees.

The Government inspection extends also to teachers' training colleges, which are under two chief inspectors, one assigned to the schools for young men, the other to those for young women.<sup>1</sup>

The Government grant for the residential (boarding) colleges in 1893 amounted to £126,392, which was equal to about 70 per cent of the current expenditure for the same. The grants to day training colleges, established in connection with university colleges, under regulations adopted in 1890, amounted to \$18,322, or about 70 per cent of their current expenditure.

*Finances.*—The current expenditure for elementary education was £8,640,859 (\$42,046,420). Of this amount the Government grant allowed upon the reports of inspection, and in lieu of school fees, furnished 67 per cent; local taxes (rates allowed for board schools only), 20 per cent; fees, 4 per cent; other local sources, i. e., subscriptions, endowments, etc., the balance.

The expenditure per capita of average attendance was, in board schools, £2 8s. 1½d. (\$11.71) and in private schools (voluntary) £1 17s. 6¼d. (\$9.13).

Two important laws relative to education were passed during the year. These are the "elementary education (blind and deaf children) act 1893" and the "elementary education (school attendance) act 1893." The former provides for the education of blind and deaf children in elementary schools under special arrangement, and makes it obligatory upon parents to avail themselves of the provision, unless their children are otherwise instructed. The latter is characterized in the report as a distinct "step forward in the history of national education." "It provides, in effect, that the minimum age for exemption, whether total or partial, from the obligation to attend school fixed by local by-laws made under the education act shall be raised to 11 years of age, instead of 10, as heretofore; and it contains a corresponding prohibition of employment of children under 11." The department expresses the hope "that as years go on, and public opinion ripens as to the importance of sufficient education, and the mischief of early child labor, it may be found possible to raise still further the minimum age of exemption."

The new regulations respecting evening schools also render this a memorable year in the history of elementary education in England. The purpose of these regulations is indicated in the word "continuation," applied to the evening schools for the first time. Heretofore these schools have been treated merely as elementary schools for ignorant youths. Under the new conception it is believed that they will become the means of extending the education of ambitious working men and women who desire to pursue their studies beyond the elementary stage.

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<sup>1</sup>Mr. J. G. Fitch, who has held this position since 1885, resigned at the close of the year under review (1893).



Hereafter pupils above 21 years of age are to be counted in the average attendance for grants, and no pupil is to be compelled to take the purely elementary subjects (i. e., reading, writing, and arithmetic).

Among the subjects of instruction recognized for the fixed grant are drawing, manual and technical instruction, physical exercises, military drill (for boys and men), household work (for girls and women). Grants may also be allowed for modern languages, algebra and geometry, chemistry, physics and other branches of science, vocal music, book-keeping, etc. Considerable freedom is allowed to managers in respect to the organization and conduct of the schools. It is noticeable that the teachers need not necessarily be lay persons.

As the scheme did not go into operation until May 18, 1893, its effects can not yet be certainly determined. It is, however, apparent that attendance upon and interest in these schools have been greatly stimulated by the new measure.

*Scotland.*—Population, 4,090,315 (estimated, 1893).

The system of public instruction established under the "Scotch education act," 1872, resembles the English system in its main features; both are maintained by the combined action of Government and local agencies, with like provision as to Government appropriations and inspection.

The Scotch educational department has the same functions as the English; it is composed, like the latter, of lords of the privy council, and has the same president. The officers of inspection in Scotland comprise 3 chief inspectors, 22 inspectors, 4 subinspectors, and 21 inspectors' assistants.

The main points of difference between the Scotch and the English systems are the greater prevalence in the former of board schools (i. e., public schools sharing in local taxes), which enroll about 85 per cent of pupils in Scotland, as against 41 per cent in England; the greater freedom left to local boards with respect to religious instruction, and the distinct recognition given to secondary education by the Scottish school law.

*Statistics 1892-93.*—The report of the education department for the year ending September 30, 1893, shows that the enrollment of children in the schools under inspection was 664,838, or 16.25 per cent of the population, and the average attendance 542,851, or 81.6 per cent of the enrollment. There were also 19,575 pupils in average attendance upon the night schools.

The number of boys in attendance upon the day schools is slightly in excess of the number of girls, being 52 per cent as against 48 per cent of girls. As regards age, 20 per cent of pupils in average attendance were below 7 years of age, 39 per cent between 7 and 10 years, and 41 per cent above 10.

As regards subjects of instruction, it appears that out of 3,010 departments (i. e., divisions of a school under a separate head teacher) for

older pupils (above 7 years of age), class subjects had been taken in 2,996, or more than 99 per cent of the whole. English and geography are, as in England, the preferred subjects. Further, 44,280 pupils were presented for examination in from one to three specific subjects. These are within the range of secondary or high school branches.

The teaching force of the schools comprised 8,325 teachers having a Government certificate, 1,874 assistants, and 3,775 pupil teachers; total, 13,974. Nearly one-third of the teachers were men. Average salaries for certificated teachers were £135 15s. 2d. (\$660.50) for men and £64 8s. 10d. (\$313.56) for women. About one-fourth of the head teachers are also provided with free residence.

The training colleges for teachers, 7 in number, were attended by 945 students; of these 138 were also pursuing studies in university classes. As the course of training is two years, these colleges afford about 440 trained teachers annually to the schools.

*Expenditure.*—The expenditure for elementary education, day and night schools, was £1,280,289 (\$6,229,886). Of this sum the Government grant, including grant in lieu of fees, supplied 71 per cent, local taxes (rates) 22.6 per cent, tuition fees 2.6 per cent, other local sources the small balance of 3.8 per cent. The cost per capita of average attendance was in board schools £2 6s. 11½d. (\$11.42), in private (voluntary) schools £2 2s. 6½d. (\$10.34).

*Examination for merit certificates.*—In 1891 the department offered a merit certificate for pupils of elementary schools above the fifth grade who should pass a special examination, intended as a proof of special thoroughness in the elementary branches. It was hoped that this measure might induce pupils to remain longer at school than was formerly the rule. Such, indeed, seems to have been its effect. The number of pupils seeking the certificate has increased each year, reaching in 1893 a total of 3,791.

*Secondary schools.*—The inspection of higher schools was first undertaken by the department in 1885. The present year 69 schools accepted the service, of which number 27 were public high schools, 124 endowed schools, and 18 private schools. The "leaving certificate" examination, which is accepted by the universities and many professional authorities in place of their own preliminary examinations, attracts a constantly increasing number of candidates. In 1888 the number was 972; it rose to 7,148 the present year.

#### RELIGIOUS INSTRUCTION UNDER THE LONDON SCHOOL BOARD.

The most notable event of the year's history is the agitation of the question of religious instruction in the London schools. To understand the full significance of this agitation it is necessary to have in mind the previous history of the matter at issue. In the celebrated debate over the education law of 1870 the question of religious instruction in public schools was discussed with thoroughness, with ardor and candor, and

a course was adopted that has ever since been known as the "settlement of 1870," an expression indicating the general hope that the arrangements were final. Occasional efforts however, have been made to reopen the matter. This was especially the case at the time of the appointment of the royal commission on the elementary education acts (1886), but although this body had a decided leaning toward the claims and interests of the established church, it made no recommendations to disturb the "settlement."

It was manifest from the investigation of the commission that the people of England by an overwhelming majority desired religious instruction in the elementary schools, and equally manifest that the existing adjustments gave general satisfaction to the laity. The provisions of the law of 1870 with respect to this matter were comprised in section 7, commonly known as the "conscience clause," which prohibited every school that shared in the Government grant from applying any religious test to pupils or forcing sectarian instruction upon any. The religious exercises were to be conducted either at the beginning or end of the day's session, so that children whose parents so desired might withdraw without the loss of other exercises; moreover, the fourteenth section of the act prohibited board schools from "the teaching of any religious catechism or religious formulary which is distinctive of any particular denomination."

Under these restrictions, as was ascertained by the commission, the school boards of England, save only 91 out of a total of 2,255, had provided for religious exercises in their schools.

The London board early elaborated a very full syllabus of Bible instruction which is followed in all its schools, and occupies from half to three-quarters of an hour daily. Explicit directions are issued to the teachers as to the carrying out of the scheme. They are requested to make the lessons as practical as possible and not to give attention to unnecessary details.

In addition to the large number of children in London affected by this instruction (about 450,000), the influence of the scheme has been greatly extended through its adoption by 101 other boards, including several of the most important cities. With these conditions in mind, it will be easy to understand the excitement caused by the sudden reopening of the question in the London board.

It is proposed here only to give the leading facts of the controversy. The discussion was started in the board in February, 1893, by Mr. Athelstan Riley, who called attention to the following statement made by the chairman of the committee on religious instruction (Rev. J. J. Coxhead) in the columns of a church paper:

I have been this morning present in one of these (board) schools during the viva voce examination of the children by the teachers. In the first room to which I entered I heard these questions: What was the name of the mother of Jesus? What was the name of His father? Every child that the teacher called upon answered



Joseph. Not a word was said to imply the existence of His divine nature. The teacher was the headmistress of an infant department (i. e., for children under 7 years of age).

In view of this statement, Mr. Riley moved—

That the teachers of the board be informed that when the religious instruction for the day is given on passages from the Bible which refer to Christ, the children are to be distinctly taught that Christ is God, and such explanations of the doctrine of the Holy Trinity are to be given as may be suited to their capacities. (School Board Chronicle, February 4, 1893, p. 122.)

Although Mr. Riley started the discussion, the chairman of the board, Mr. Joseph R. Diggle, soon became the leader of the movement, while the Hon. Lyulph Stanley appeared as the leader of the opposition.<sup>1</sup>

During the discussion of the original motion, which was prolonged through several meetings of the board, Lyulph Stanley moved "that the board adhere to the scheme of biblical and religious teaching which was settled by the first board and has remained in force down to the present time." This was carried by a majority of 12 in a vote of 54. At the same meeting a motion was carried by a majority of 19 providing for the substitution of the words "Christian religion and morality," for "morality and religion," the expression used in the original directions of the board for the guidance of their teachers in the matter.

Resolutions, counter resolutions, and debates within the board, petitions and protests from without became the order of the day. The letters and petitions on the subject received by the board up to October 12, 1893, were thus classified by a member, Mr. J. H. Gladstone:

Forty-one letters of individuals or of 2 or 3 individuals combined; and 99 memorials of public bodies or of groups of at least 6 individuals. Taking the first category, 7 were in favor of the changes proposed in the regulations of the board, 34 against; taking the second category, 11 were in favor, 86 against, 2 were doubtful; so that, taking the two categories together, there would seem to be numerically more than 6 to 1 against the proposed changes.

In November the rumor arose that the school management committee of the board had agreed to advise that a circular be sent to the teachers explaining the sense in which they were to understand the word "Christian." The rumor was confirmed early in February when the committee submitted the proposed circular to the board. The document was kept under discussion for several meetings and finally adopted in an amended form as follows:

SIR (OR MADAM): In forwarding to you a copy of the rules of the board having reference to Bible instruction and religious observances, I am directed to ask your thoughtful consideration of the following suggestions, in the hope that they may be useful for your guidance and direction:

The Bible is your text-book, from which it has always been the desire of the board that you should give such explanations in the Christian religion and morality as are

<sup>1</sup>See "Religion—at the London School Board" (Nineteenth Century, November, 1893). "The London School Board—a reply to Hon. Lyulph Stanley" (Nineteenth Century, December, 1893).

suitd to the capacities of children of various ages attending the schools of the board. Such explanations and instruction should of course be based on the conception of human nature which the Bible presents, namely, that a man is a responsible being with distinct and definite duties to God, to himself, and to his fellow-man. Understanding child nature as you do, you will of course adapt your teaching to the various motives by which children are influenced; the object and purpose of all education being the formation of habits, mental, moral, and religious. And it is important to this end that the character of the children committed to your care should be studied individually, so as to correct the defects and encourage and stimulate the good points in each.

The lessons adapted to an infant school are not the same as those which are suitable to children of a more advanced age, and there are subjects essentially connected with the well-being and happiness of the individual on which the greatest caution has to be observed; but instruction in morality should not shirk the consideration of the relations of man to all the conditions of his being, and the Bible lesson affords you opportunities of so discussing these questions with the elder children as to impress them with the paramount importance of being pure, sincere, and upright in their life.

The board have never intended their teachers to diverge from the presentation of the Christian religion which is revealed in the Bible. While following the syllabus which is suggested to you yearly, you are at liberty to refer to other parts of the Bible, by which the principles of the Christian religion may be elucidated and enforced. These principles include a belief in God the Father as our Creator, in God the Son as our Redeemer, and in God the Holy Ghost as our Sanctifier.

The board can not approve of any teaching which denies either the Divine or the human nature of the Lord Jesus Christ, or which leaves on the minds of the children any other impression than that they are bound to trust and serve Him as their God and Lord.

The board desire that in giving the Bible lesson you will strictly observe, both in letter and spirit, the provisions of sections 7 and 14 of the elementary education act of 1870, and that you will make no attempt whatever to attach the children to any particular religious denomination.

A question having been raised as to whether, under the heading of religious observances, the board permit the use of hymns, concluding with the Doxology or prayers other than the Lord's Prayer, I am directed to inform you that no restriction is placed upon your liberty of choice in this respect.

These suggestions are made by the board in no spirit of distrust or want of confidence in your good intentions to make the Bible lesson as useful as possible, but in order to avoid any misconceptions which may exist as to the meaning and intention of the board's rules with reference to a portion of their work upon which they lay the greatest stress. If there are those among you who can not conscientiously impart Bible instruction in this spirit, means will be taken, without prejudice to their position under the board, to release them from the duty of giving the Bible lesson.

The religious opinions of candidates will not in any way influence their appointment or promotion.

The significance of the circular is emphasized by explanations of its intent brought out at subsequent meetings of the board. For example, in the meeting of April 26, 1894, Rev. Cope land Bowie, who had voted against the circular, put the following questions to Mr. Athelstan Riley and others:

(1) Does the circular, in your opinion, render it incumbent upon teachers who conscientiously believe that the doctrine of the Trinity is nowhere to be found in the Bible to discontinue giving Scripture lessons in the schools of the board?

(2) Is a teacher, who holds Jesus in loving reverence as the bravest, noblest, purest Son of God the world has seen, but who does not believe that he was

Almighty God, incompetent to give a Bible lesson under the terms of the circular, even though the teacher in question scrupulously avoids all controversial theology?

The replies were as follows:

Mr. Riley:

(1) Yes; I take that to be the force of the circular as explanatory of the rule.

(2) Yes, as above. Mr. Bowie puts the fundamental difference between the Christian and Unitarian religions with admirable clearness. To allow the children, as they pass through the hands of different teachers, to be taught to regard Jesus Christ first in one aspect and then in the other would be an outrage on Christian and Unitarian parents alike. It is generally held that one common religion should be taught throughout the board schools, and in this case, as it is impossible to get a religion which trims between these two, it is clear that the board must choose the Christian, which is the religion of the majority of the English people. Unitarian parents, knowing the character of the board's teaching, can avail themselves of the conscience clause. As it appears to be the general wish of people outside and inside the board that the "compromise" i. e., the common religion, should be maintained, I have always expressed myself willing to support this if it is made clear that this religion is Christian in the sense of containing those fundamental tenets of the Christian religion upon which churchmen and Christian nonconformists are agreed. I am not, however, responsible for the policy of a common religion, so I can not be held responsible for its results. Personally, I am not in favor of having only one kind of religious teaching in the schools; considering the widely differing beliefs of parents, such a practice appears to me to lack the elements of justice.

This view was ably advocated by Dr. Martineau, the respected leader of the Unitarian body, in a letter to the Times of May 4. Here are Dr. Martineau's words:

"The error of the past, then, has been the attempt to fit a uniform system of religious instruction to the wants of so variegated a whole as the population of a London school district. If you satisfy the ecclesiastical standard, you wrong the miscellaneous host of unattached, yet not irreligious, people. If you insist on the latitude necessary to make the best of their religious proclivities, you disappoint the genuine church disciples of the indispensable nurture of their piety. The simple remedy is to recognize the different requirements of their consciences and make distinct provision for each. In any school worked under the 1871 rule this may be done by adding a department to the religious teaching conformed to Mr. Athelstan Riley's restrictive condition, without prejudice to freedom established elsewhere. I do not see why he and his friends should not have all they desire, provided they are content with the consideration justly due to their own consciences and refrain from all unfriendly attitude toward the different ideas and usages of their copartners. If, in deference to the special requirements of the Jews, arrangements of different types have been thought admissible in different schools, there seems nothing to forbid the coexistence of similar though minor varieties within the same school."

Dr. Martineau, it will be observed, agrees with me. I have no doubt the time is not far distant when sensible people of all religions will come round to our opinion.

Rev. Rowland Plummer:

It is for the individual teacher to decide as his conscience may direct, but in my opinion no man can conscientiously teach as an article of faith that which he believes untrue; therefore, if he asked me, I should advise him to take advantage of the extension of liberty granted by the circular and apply to be excused Scripture lessons, without prejudice to his present position or future promotion.

Mr. Sharp:

In my opinion, the circular relieves a teacher who denies the Divinity of our Lord and Saviour Jesus Christ from the duty of giving Bible instructions under the rules of the board.



Mr. Bowie asked the chairman of the Scripture subcommittee:

(1) Are teachers who are unable to assent to the tritheism set forth in the circular incompetent to give lessons from the Bible?

(2) In your speech at the board you said: "Of course, the circular is a test." Is it proposed to apply the test in the case of teachers who conscientiously believe that the religion of Jesus is best summed up in the doctrines of the fatherhood of God and the brotherhood of man?

(3) Teachers are required to give lessons from a specially prepared syllabus. Do the expressions "God the Son" and "God the Holy Ghost" occur in any chapters or verses of the Bible set down in the syllabus? If so, where?

(4) If the expressions "God the Son" and "God the Holy Ghost" are unscriptural phrases, is it proposed to teach the children these dogmas under the pretense that they are contained in the Bible?

The Rev. John Coxhead, chairman of the Scripture subcommittee:

(1) The regulations under which teachers are expected to work are clearly set forth in the rules of the board, and are definitely explained in circulars sent to the teachers under the authority of the board when such explanations seem to be required.

(2) The committee of the board, and not individual members, administer the rules of the board.

For the answer which Mr. Copeland Bowie appears to require for 3 and 4 I would refer him to Pearson on the Creed and to a more recent book, *The Faith of the Gospel*, by the Rev. Canon Mason. (*School Board Chronicle*, April 28, 1894, pp. 449, 450.)

It need hardly be said that the circular is regarded in many quarters as a religious test applied to teachers, and, as such, is vehemently opposed.

The National Union of Elementary Teachers, the great body of Wesleyan Methodists, are strong in their denunciations. The difficulties in the way of giving practical effect to the circular are indicated by the fact that 3,150 teachers employed by the board, or nearly half the entire body, have asked to be relieved from giving religious instruction under the new conditions. The request, with the signatures appended, was forwarded to the board by the secretary of the Metropolitan Teachers' Association. Instead of replying through the same medium, the board decided that—

The school management committee be authorized to address a letter to each of the signatories to the memorial forwarded by Mr. T. Gautrey, inquiring whether they desire to be relieved from the duty of giving Bible instruction, in accordance with the following sentence of the circular, dated 15th April, 1894, referring to Bible instructions:

"If there are those among you who can not conscientiously impart Bible instruction in this spirit, means will be taken, without prejudice to their position under the board, to release them from the duty of giving the Bible lesson."

The association at once called a meeting to protest against this decision. The call was responded to by 1,500 members, who unanimously adopted the following manifesto:

This large meeting, on behalf of the 3,150 signatories asking to be relieved from giving religious instruction until the circular be withdrawn, hereby respectfully decides, and recommends the absent signatories to do likewise, not to reply individually to the board's individual request. They take this step with reluctance and a

due sense of its gravity. They made the applications to be relieved in proper form and after mature consideration, and to these applications they have nothing to add and from them nothing to subtract. As experts, they are convinced that the introduction into the schools of the definite dogmatic teaching desired by the leaders in this movement is both unsuitable and unwarranted. They feel strongly that the religious instruction should aim at the formation of character and the inculcation of the principles of morality rather than supplying doctrinal teaching, which is best left for a more mature age. Instruction of the former character they have given in the past from the open Bible, and, as they are denied the relief promised on application, they will continue to give such instruction in the future, without reference to the circular.

They are still of opinion that the operation of the circular will amount to the application of a test, and they agree with the Rev. Dr. Abbott (late of the city of London school) that a "teacher who will conform, will be more useful than one who will not, and in the end, the former will have his reward in better pay and quicker promotion," and "that a new kind of 'dissent' will thus be started; and 'school board nonconformists' will find themselves gradually drifting out of the swim of professional advancement."

They also respectfully resent the board's action in treating their applications as if they were not bona fide, and because they were sent through the Metropolitan Board Teachers' Association. They can only interpret the board's action as an attempt to break up their organization, and this they are determined to resist at all hazards.

In conclusion, they much regret to have to assume an attitude of apparent opposition to the board's wishes, and they still earnestly hope the board will see its way to withdraw the circular, and allow the instruction to continue on the lines and with the great success which has hitherto attended it. (Schoolmaster, July 14, 1894, p. 55.)

At this crisis the executive of the National Union of Elementary Teachers, an association representing the collective body of English teachers, also sent a memorial to the board which reviews the situation in a judicial but emphatic manner. This memorial is as follows:

The executive of the National Union of Teachers observe with profound regret that recent action by the London school board has brought the question of religious education into public dispute.

For twenty-three years the subject had been settled upon the peaceable basis of compromise; in practice its theoretical differences and perplexities have been obviated or solved; and, in point of fact, the so-called "religious difficulty" had ceased to exist. With sorrow and foreboding, therefore, the executive have seen this delicate matter flung anew into the arena of public polemics and sectarian strife. A war of creeds has been incurred; the healing influences of time and tactful teaching have been arrested, and a debate has recommenced that can not proceed afresh without fresh wounds to religion and further hindrance to the schools.

Deploring this prospect, the executive, in the name of the teachers, make solemn protest against action so perilous and incendiary. With full knowledge of the nature and quality of the religious instruction imparted, they declare that there is no parental demand or justification for change. They venture to think that none can speak with more experience of the facts than the teachers themselves; and the teachers are aware that the instruction has been such as Christian theologians could collectively indorse. They know that the scholars have been carefully and reverently taught the essentials of the Christian faith as drawn from Holy Scripture. They know that the syllabus of instruction in use in the board schools is a compendium of the fundamentals of Christianity; that the children have learned by heart

the Lord's Prayer, the Ten Commandments, and many of the choicest passages from the Gospels, the Epistles, the Psalms, the Proverbs, the Pentateuch, and the Prophets; that lessons have been regularly given on the life, parables, miracles, and the divinity of Christ; the Four Gospels; the Epistles of St. Paul, St. John, and St. James; the Acts of the Apostles; the Psalms, the Proverbs, the Prophecies of Isaiah and Jeremiah; the Pentateuch, the Books of Joshua, Judges, Ruth, Samuel, and Kings; the lives of Abraham, Isaac, Jacob, Joseph, Samuel, and David, the life and law of Moses.

They know that all this has been faithfully expounded according to the capacities of the children, and that the parents who have claimed the exemptions of the conscience clause are infinitesimally few. They have known that the religious lessons and observances in London board schools (as in the schools elsewhere) have always won high commendation from parents, inspectors, clergy and ministers of all denominations. They are further aware that three-fourths of the teachers in question have been taught and trained in schools and colleges controlled by the clergy of the Church of England, and of those equipped at other colleges at least one-third were members of that church. They know that without exception the other teachers were trained in schools or colleges wherein religious observances obtained. They also know that the prayers and hymns used in board schools are prayers and hymns appointed for the services of the Church of England or other Christian denominations. In short, the executive feel that the teachers in London board schools may fairly claim to have taught the faith with knowledge, in unity of spirit and the bond of love.

With indignation, therefore, the executive have seen the respectful protests of associated teachers against the initiation of dogmatic creeds and tests construed by some to mean a hatred of the ethical part of a teacher's duty, and an atheistic or agnostic attitude of mind. The teachers resent and repudiate the charge. So far from seeking to subvert religious instruction in the schools, the teachers have, by tact and care, made its continuance practicable. But they fear that its continuance will become impracticable if varying interpretations of the Word, by varying boards, are to take the place of the system that has worked so well hitherto. The authority of one theological circular would be destroyed by the issue of another, and orthodoxy would become heterodox at every change of government in the board. To fluctuate from one set of tenets to another, and from that to a third, and back again, must lead to contemptuous unbelief, confusion, and revolt, and thus to the secularization of board schools; whilst the prohibition of religious teaching in board schools would rapidly induce the secularization of all State-aided schools and colleges. Already the action of the board has greatly strengthened the argument that religion should be taught only in other places and ways.

Already, also, the impression has been created that insistence on theological knowledge means treason to the interests of general education. While protracted and bitter debates on the compromise and the circular have occupied the attention of the board, defects and evils in the schools have not received due attention. Children have been left without schools, schools without sufficient teachers, and health and study have been allowed to suffer from insanitary buildings, dirty rooms, and classes cruelly large.

But there are further grounds for this protest. The action of the board in refusing to accept the teachers' collective claim to liberty of conscience resembles an attempt by a powerful body to oppress individuals who are not so powerful. Duty to each other demands that teachers in board schools should withstand denominational tests that might withhold from any section of themselves the ordinary opportunities for professional employment and promotion. And, finally, there is serious danger of the mischief set afoot in London extending to the provinces. At present the conflagration is mainly local to the metropolis, but there are already symptoms of a contagious spread of the evil elsewhere. The example set by London would doubtless be



copied, though the circulars would differ according to localities, and might often define Christianity in terms at variance with those of the circular issued by the London board.

Respectfully, but earnestly, therefore, the executive again appeal that the circular may be withdrawn, in the interests of religion and education. (School Board Chronicle, September 15, 1894, p. 270.)

At present the controversy within the school board is eclipsed by the agitations of an election campaign. In accordance with the law a new triennial board comes into power in December. The religious question is the issue before the voters and their action must determine its further developments.

An interesting complication has arisen in the progress of the matter before the London board from the discovery of or rather the prominence given to the modifications of the scheme of religious instruction in its application to the Jewish schools.

As stated by Mr. Diggle, chairman of the London board, in explaining the action of the board, it was "found impossible to fill a school in the East End until they appointed Jewish teachers." Under these circumstances the absolute necessity of adjusting biblical instruction to the conscientious scruples of the teacher and parents is evident. Hence the board sanctioned a syllabus drawn up for the Jewish schools by the chief rabbi, Dr. Adler. In this the lessons from the New Testament are omitted and the Hebrew Scriptures are used.

It is claimed that the concession is made on historical grounds only, and that Jewish teachers use the syllabus in the undenominational spirit. Naturally their ecclesiastical rivals are not inclined to take so neutral a view, and a pressure has been brought to bear upon the Government with a view to securing the repeal of section 14 of the law of 1870. A bill to this effect and providing also for denominational instruction under specified conditions was introduced into the House of Lords, May, 1893, by the Bishop of Salisbury. These conditions are identical with those in vogue in several continental countries and often advocated in the United States. The objections to them are stated very clearly by Dr. J. G. Fitch in an article in the *Nineteenth Century* for July, 1894. On this point he says:

Among the expedients most frequently suggested by those who are dissatisfied with the present arrangements is one which would provide that at certain hours, set apart for the special purpose, the ministers of the various churches should be asked to form classes, composed of the children of their several flocks, and to give them the distinctive instruction proper to their several creeds. There is at first sight a plausible show of fairness in this suggestion, but in practice it has never succeeded well, and there are excellent reasons why it never could succeed in a community like ours, for, in the first place, the clergy have not always the time or the will to undertake the work. The best of them are preoccupied with other duties. If they are to be paid, the expense will be considerable, and it would not be likely that Parliament would sanction the payment from the rates. If they are to be unpaid, their attendance will be desultory and uncertain, and subject to such frequent interruption as to dislocate seriously the organization of the school. But even if their attendance could be secured the results would be very unsatisfactory.

It is no disparagement to the ministers of religion to say of them that, as a rule, they are ill suited to be the teachers of young children. Their habits of mind and the peculiar nature of their pastoral work unfit them for this duty—a duty requiring special skill and insight and a kind of tact in the presentation of truth to young minds which is only to be gained by exceptional training and experience. Moreover, the fact that the minister was employed as the representative of a particular church would lead him to accentuate those points of difference which distinguish that church from others, and thus there would be introduced among the children visible sectarian divisions, which would have the most unedifying effect on the social and moral character of the school. But the most serious result of such an arrangement would be the degradation of the teacher's office.

To supersede him in regard to the one subject of instruction which is presumably of the highest importance would be to deprive him of much of his moral influence and to lower him in the eyes of the scholars. He is, after all, a qualified teacher. He knows better than anyone else is likely to know what is the nature of childhood, and what are the most approved methods of finding access to the understanding, the conscience, and the sympathies of those whom he teaches. He has no denominational interests to serve, but he is responsible for the general education of his scholars and for their moral training; and his scriptural instruction, therefore, is likely to be more effective and more appropriate than that of a stranger, because it will be part of a rounded and well-ordered scheme of intellectual training, and not a purpureus pannus, patched on at an extra time, and having no organic connection with the rest of the school course. Such well-meant efforts as those of the Bishop of Salisbury, in his abortive bill of last session, proceed on two assumptions: (1) That the parents, as a rule, belong to some religious denomination or other; and (2) that they desire to have denominational instruction imparted in the day school. Both hypotheses will be found on closer inquiry to be untenable (p. 66).

Subsequently the House of Lords ordered a "return of the regulations with regard to religious instruction" from all school boards, to secure which the department of education, June, 1894, issued a schedule of inquiry to be filled out by each board. The questions which it comprises are as follows:

- (1) Is any religious teaching or religious observance practiced or given in the schools of the board?
- (2) Are any hymns or prayers used?
- (3) Is the Bible read (with or without comment thereon)?
- (4) State the time (if any) allotted to each subject.
- (5) Give the syllabus of religious instruction.
- (6) Give the rules (if any) for annual examination in religious knowledge.
- (7) A copy of the regulation of the board, in pursuance of which the religious observances and instruction are carried out, should be furnished.
- (8) If no formal regulation has been passed, state the practice of the schools under the board. (School Board Chronicle July, 14, 1894.)

At this point the whole matter rests, waiting the results of the school-board elections in November.

#### MOVEMENTS AFFECTING SECONDARY SCHOOLS.

The most important event of the year with respect to secondary education was the conference held at Oxford October 11 and 12. The delegates were men and women of distinction in the educational or political world. Oxford, Cambridge, London, and Durham universities,

the university colleges, and the endowed schools were all well represented. The main subject before the conference was that of the State organization of secondary schools, and the speakers very naturally kept in view the lines on which secondary instruction in England divides.

The practical outcome of the conference was an agreement that an inquiry commission should precede legislation affecting secondary schools. The recent announcement that the commission is to be appointed gives general satisfaction.



## CHAPTER V.

### EDUCATION IN FRANCE.<sup>1</sup>

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TOPICAL OUTLINE.—Outline of system of public instruction—Official statistics, 1891-93—Inspection of infant schools (*écoles maternelles*)—Summary of recent measures affecting secondary schools (*lycées and communal colleges*)—Measures affecting the faculties—Reorganization of medical studies and institution of a new course of scientific studies preparatory to the medical course.

France, Republic.—Area, 204,092 square miles. Population (actual) April 12, 1891, 38,095,156; domiciled or legal, 38,343,192.

*Civil divisions.*—For purposes of civil government France is divided into 86 departments (90 if Algiers be included), each having its local legislative assembly, which is formed by election. The departments are subdivided into *arrondissements*, and these into cantons. The smallest civil divisions comprised within the cantons are *communes*.

The present Government of France maintains a system of education which preserves many of the administrative features of the Imperial University. Authority is centralized in a cabinet officer, the minister of public instruction and fine arts.<sup>2</sup> The expenses of the service are covered by an annual appropriation from the State, which receives into its treasury the local appropriations for the service and the receipts from tuition fees.

All appointments to the service, whether official or professional, are made either by the minister or by the President of the Republic, excepting only in the case of elementary teachers, who are appointed by the heads of departments (prefects, themselves appointed by the President). The officers of administration form an educational hierarchy, entrance into which is secured not alone by favor, but upon proof of special qualifications; promotions in the same are generally the reward of distinguished service or the recognition of superior merit. Officials, professors, and teachers all receive their salaries from the State. The control of the system is facilitated by its organization into three great departments—primary, which includes infant schools (ages 2 to 6), primary schools (elementary and superior, ages 6 to 13), adult schools, and normal schools for primary teachers; secondary, to which

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<sup>1</sup>Prepared by A. Tolman Smith.

<sup>2</sup>Present incumbent, M. G. Leygues, who succeeded M. Spuller in June, 1894. The former assumed the portfolio in December, 1893.

belong the lycées and communal colleges; superior, which comprises the faculties for liberal and professional training, and special schools.<sup>1</sup> Each department has its own chief or director,<sup>2</sup> its separate budget and distinct body of laws, decrees, etc. The academies (17 in number) are local districts of educational administration.

Each académie forms a scholastic unit, whose chief (recteur) is the official head of all the teaching institutions located within its bounds. The possession of a doctor's degree is an essential qualification for the rectorship.

The 90 departments (districts of civil administration) are treated as subdivisions of the académies in respect to educational affairs, the prefects of departments having a measure of control over primary and normal schools.

The supervision of secondary instruction is intrusted to general inspectors, at present 10 in number, and that of primary instruction to a graded series of inspectors, (1) general inspectors, including 9 assigned to particular sections of the country, several assigned to the oversight of special branches of study, and general inspectresses of infant schools. These officials report directly to the minister as to the manner in which the educational law is carried out. (2) Academic inspectors (inspecteurs d'académies), one for each department, who are subordinate to the rectors. They have the general direction of primary schools, conduct examinations for teachers' certificates, appoint all teachers on probation, and name the candidates from whom the prefects of departments may appoint full teachers. (3) Primary inspectors, at present about 450 in number, or 1 for every 150 primary schools. They inspect the work of individual schools, and report to the academic inspector. (4) Medical inspectors, whose duties include the examination of children with respect to their physical condition and of sites and buildings with respect to sanitary particulars. There are also inspectresses of boarding schools for girls. It should be observed that all these officials must have access also to private schools.

The scholastic work of the system is regulated by law or by official decrees which embody the matured opinions of the superior council of education, a representative body of 60 members, three-fourths of whom are elected by their peers from the various orders of public instruction, the remainder being appointed by the President. The council is not only an advisory, but also a judicial body, being the final court of

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<sup>1</sup>The special schools which are under the exclusive control of the minister of public instruction and fine arts are the Collège de France, Muséum d'Histoire Naturelle, École Normale Supérieure, École Française de Rome, École Française d'Athènes, École Nationale des Chartes, École Spéciale des Langues Orientales Vivantes, École Nationale et Spéciale des Beaux Arts à Paris, Conservatoire National de Musique et de Déclamation.

<sup>2</sup>The present incumbents are: M. Louis Liard, superior; M. Rabier, secondary; M. F. Buisson, primary.

appeal in certain cases of contention; as, for example, cases of the removal of teachers by local authorities. Paris is the seat of the council, whose deliberations are presided over by the minister. The academic rectors have the advice of academic councils composed of inspecteurs d'académies, professors, and teachers; finally, the prefects are assisted by departmental councils. These several councils save the work of public education, to some degree at least, from the mechanical routine which is one danger of a highly centralized system.

As regards primary schools, the direct interest of the people is enlisted in several ways. The law of 1833 made it obligatory upon every commune to establish a public school, which under the law of June 16, 1881, must be a free school, and under laws of 1882 and 1886, secular, and taught by a lay teacher. A commune, it must be remembered, is the simplest civil division in France. Its local affairs are controlled by a council and a mayor chosen from the members of the same. A commune may have less than 20 inhabitants; it may be a populous city. Paris, indeed, is a commune, although differing somewhat from others in its form of local government. Large or small the commune must establish a free primary school, provide the site and building and a portion of the current expenditure; not only so, but every commune of more than 500 inhabitants must have a separate school for girls. (Laws of March 15, 1850, and April 10, 1867.)

Since, however, many communes are too small and too poor to obey the law, and others require stimulating, the State has been exceedingly liberal with subsidies to help in the initial steps. The subsidies and advances for this purpose amounted in the decade 1878-1888 to \$105,000,000.

In order that the communes should perform their part, provision must be made for concerted action. Hence the departmental councils appoint delegates to confer with the communal authorities and with the primary inspectors as to sites, buildings, material, etc. The mayors of communes have free access to the schools at all times; their duties and those of the delegates are much like those of our district school committees, excepting that they have no control over teachers or programmes. It is incumbent also upon communes to maintain funds (*caisses des écoles*) for the assistance of indigent pupils. Although the law (March 28, 1882) obliges parents to secure the instruction of their children, they can make choice of the means, i. e., public schools, private schools, home tuition.

*Official statistics.*—No complete statistics of education in France have been published since 1889.<sup>1</sup> The following statistics relative to the most important operations of the system are, however, from official sources of later date.

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<sup>1</sup>In that year the minister submitted the following reports: "Statistique de l'enseignement primaire, 1886-87," secondaire 1887, supérieur 1878-1888.



*Finances.*—The State appropriation for education in 1893 was \$33,699,943. Estimates submitted to the Chamber of Deputies by the financial committee for 1894 showed an increase of \$1,204,852.

The sum allowed in 1893 was distributed as follows: For administration, 2.3 per cent; department of superior instruction, 10.3 per cent; of secondary, 9.6 per cent; of primary, 77.8 per cent. (*Rapport de la commission du budget chargée d'examiner le projet de loi portant fixation du budget général de l'exercice 1893.*)

The amount of the appropriation represents approximately the expenditure for public education in that year, as the receipts from fees in secondary and superior institutions and the amount raised by the obligatory communal school tax are paid into the public treasury. Incomes from other sources, i. e., gifts, legacies, etc., are retained by the institutions or by the local authorities.

The total expenditure for public primary schools (infant included) in 1890 was 162,681,805 francs (\$32,536,361). Of this amount 64.8 per cent was contributed by the State and the balance by the communes. The marked increase in the relative proportion derived from the State (it was 50.6 per cent in 1889 as against 64.7 in 1890) is due to the fact that the State has assumed the responsibility of paying the salaries of teachers. In 1892 the expenditure rose to 171,395,206 francs (\$34,279,041), the proportionate parts of the State and communes being the same as in 1890. (*Résumé des États de situation de l'enseignement primaire, 1890-91, Tables 22 and 23; also, Statistique de l'enseignement primaire, 1891-92, p. cxix.*)

*Enrollment in universities and schools.*—*Statistics of facultés (universities) January 15, 1893.*

## STUDENTS.

Names of faculties.	In the State faculties.		Total.	In the private faculties.		Total.
	Paris.	Provincial, including Algiers.		Paris.	Provincial.	
Protestant theology .....	47	42	89			
Law .....	3,503	4,707	8,210	306	362	668
Medicine (faculties) .....	3,634	2,836	6,470		139	139
Sciences .....	599	1,267	1,866		67	67
Letters .....	1,230	1,770	3,000		99	99
Pharmacy (superior schools and mixed faculties) .....	1,097	916	2,013		15	15
Full-course schools of medicine and pharmacy .....		1,749	1,749			
Total .....	10,110	13,277	23,387	306	682	988
Total in 1892 .....	9,837	12,491	22,328	331	691	1,022
Difference in 1893 .....	+273	+786	+1,059	-25	-9	-34

The foreign students comprised in the table numbered 1,432 in 1893, an excess of 35 above the previous year. They were distributed as follows:

Theology .....	8
Law .....	326
Medicine .....	851
Sciences .....	69
Letters .....	123
Pharmacy .....	29
Full-course schools (medicine and pharmacy) .....	26

(Rapport de la commission du budget, etc., p. 8.)

*Secondary schools for boys.*

	Students.		
	1890.	1891.	1892.
Lycées and communal colleges .....	84,186	83,764	85,291
Private lay establishments .....	18,645	15,840	15,503
Total .....	102,831	99,604	100,799
Ecclesiastical establishments .....	48,666	51,181	50,693
Small seminaries (clerical) .....	23,016	23,042	23,359
Total .....	71,682	74,223	74,058
Grand total .....	174,513	173,827	174,857

PUBLIC SECONDARY SCHOOLS FOR GIRLS.

In 1891 there were 11,645 students in the public secondary schools for girls, i. e., lycées (State schools), 29; communal colleges, 26; secondary courses (or departments), 61.

To the foregoing may be added 21,230 boys and 7,579 girls in the higher primary schools. (Report of financial committee of the Chamber of Deputies, commission of budget, etc., 1893, pp. 43, 60, 67.)

*Primary schools.*—For the following information as to primary schools the office is indebted to the eminent statistician, M. E. Levasseur:

FRANCE AND ALGIERS, 1891-92.

	Number of schools.	Pupils.		Teachers.	
		Boys.	Girls.	Men.	Women.
Public schools .....	67,262	2,355,318	1,925,865	55,691	10,672
Private schools .....	15,271	450,531	824,756	46,795	33,516
Total .....	82,533	2,805,849	2,750,621	102,486	44,188
Grand total .....		5,556,470		146,674	

From a further classification it appears that the lay schools number 64,000, with an enrollment of 3,900,977 pupils, and clerical 18,533, with an enrollment of 1,655,493. M. Levasseur notes that there has been a decline of 37,413 in the total enrollment since 1890-91.

Infant schools (*écoles maternelles*), which are not included in the above statement, excepting only in the financial showing, numbered 5,411 in 1891-92, of which 2,603 were public and 2,808 private. The former had 5,140 teachers and an enrollment of 456,008 pupils; the latter 3,613 teachers and 250,571 pupils, or a total teaching force of 8,753, and a total enrollment of 706,579. The inspection of these schools is intrusted to persons specially qualified for the work. The office is indebted to M. F. Buisson, director of primary instruction in the ministry of public instruction, for the following statement as to the conduct of this service:

#### INSPECTION OF INFANT SCHOOLS (*ÉCOLES MATERNELLES*) IN FRANCE.

In addition to the inspectors of primary instruction, the persons employed to inspect or simply visit the infant schools (*écoles maternelles*) are the inspectresses-general, the primary inspectresses of girls' schools, the departmental inspectresses, and the women belonging to the local committee (*comités de patronage*).

##### I.

Inspectresses-general are 4 in number, and are appointed by the minister. The conditions required for the position are the following:

The applicant must be at least 35 years of age and must have had five years' service in public or private instruction and must have received a certificate of aptitude for the inspection of infant schools. (Order of January 18, 1887, Chap. V, arts. 183 to 186.)

The inspectresses-general are divided into three classes, with the following salaries: First class, \$1,000 (5,000 francs); second class, \$800 (4,000 francs); third class, \$600 (3,000 francs). Besides their salaries, they are allowed \$4 (20 francs) a day and their traveling expenses while in the performance of duty pertaining to their office.

The inspectresses-general make the circuit of the territory assigned to them. They inspect the infant schools, both public and private, but their inspection of the private schools is confined to hygienic and moral conditions. They make a detailed report of their work each year to the minister of public instruction, to whom they are all responsible.

##### II.

#### PRIMARY INSPECTRESS.

The service of primary inspectress is of recent date, having been instituted by the law of July 19, 1889. It exists only in the department of the Seine and Oise, and is there in reality only in the nature of an experiment. There is only one inspectress, and she confines her work to the infant schools for girls in this single department.

##### III.

#### DEPARTMENTAL INSPECTRESSES OF INFANT SCHOOLS.

These are appointed by the minister, but are found only in those departments which engage to pay one half of the salaries, the other half being paid by the State. Two or three departments may unite to bear this expense, dividing it equally.

The department of the Seine employs five departmental inspectresses, bearing the entire expense of their service. Applicants for these positions must be 30 years of age and must have had three years' experience in teaching. They must also have received a certificate of aptitude for the inspection of infant schools.

These inspectresses are divided into three classes, with the following salaries: First class, \$480 (2,400 francs); second class, \$450 (2,200 francs); third class, \$400 (2,000 francs).



Besides her salary each inspectress is allowed a minimum amount of \$100 while in actual performance of her duties when she has charge of only one department, and a minimum of \$200 when several departments are under her inspection. This allowance includes the traveling expenses.

The inspectresses of the infant schools are under the authority of the academic inspectors, who determine their circuit. They visit each school at least twice a year and make a special report of each inspection. They advise concerning the appointment and dismissal of directresses and subdirectresses of the public infant schools, and also as to their salaries.

## IV.

## LOCAL COMMITTEES (COMITÉ DE PATRONAGE).

One or more local committees of women may be created in each department or commune where there is a public infant school.

The members of these committees are appointed for three years by the academic inspector upon the advice of the mayor, who presides over the committee.

Their duties are confined exclusively to watching over the hygienic conditions of the schools, their good management, as well as the use of the funds or gifts collected for the children. (Decision of January 18, 1887.)

## V.

## PROGRAMME OF THE EXAMINATION FOR THE CERTIFICATE OF APTITUDE FOR THE INSPECTION OF INFANT SCHOOLS.

ARTICLE 185. The examination consists of a written, an oral, and a practical test. There are two written tests:

First. A composition on pedagogy applied to the infant schools. (Time allowed, three hours.)

Second. A composition upon the hygiene of infant schools (care to give to the children, building, and premises).<sup>1</sup> (Three hours.)

The oral test consists of questions:

First. On pedagogy applied to infant schools and on hygiene.

Second. On the laws pertaining to the administration of these schools.

The practical test consists of an inspection of an infant school and an oral report of this inspection.

## SUMMARY OF RECENT MEASURES AFFECTING SECONDARY INSTRUCTION.

As regards the department of secondary instruction, comprising the lycées and communal colleges, the efforts of the past two years have been directed to giving effect to the decrees of August 8, 1890, and June 4, 1891, which were considered in full in the Commissioner's report for 1890-91.<sup>2</sup>

To summarize briefly, these measures, so far as they relate to the internal conduct of the schools, are intended to lessen the strain of overcrowded programmes, to break up mechanical routine, to stimulate the free initiative of individual institutions, and to elevate the scholastic standards of the "modern course."

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Hygiene of the building and premises, choice of site with reference to the sunlight, ventilation, lighting, heating, furnishing, sanitation, lavatories, baths, hygiene of the children; feeding, clothing, contagious maladies (procedure with respect to), evils arising from defective hygiene.

<sup>2</sup>Pages 109-124.

The most obvious purpose of the new measures is to effect an important change in the bachelor's degree, which is the goal of the classical course of the lycées. For the three degrees established in 1865 (baccalauréat ès lettres, baccalauréat ès sciences complet, baccalauréat ès sciences restreint), and secured by examinations essentially different, there is substituted a single bachelor's degree requiring the same preparation on the part of all candidates. Election is allowed simply in the last year (i. e., philosophie) of the lycée course between three equivalent lines of study, and in accordance with the choice the diploma is inscribed as "Lettres, philosophie;" "Lettres, mathématiques;" or "Lettres, sciences physiques et naturelles."

The nonclassical secondary course established in 1865 under the name enseignement secondaire special is now termed enseignement secondaire moderne, and the diploma to which it leads, baccalauréat de l'enseignement secondaire moderne. This diploma, like the classical, may bear one of three inscriptions: "Lettres, philosophie;" "Lettres, sciences;" or "Lettres, mathématiques."

*Measures affecting the faculties.*—As regards the department of superior instruction, the project of law for transforming the faculties into autonomous universities, which was considered in full in the Commissioner's last report,<sup>1</sup> is still under debate. Meanwhile the development of courses of study, the increase of equipments, the extension and deepening of professional courses, or, in brief, the transformation of the scholastic work in the spirit of university ideals, continues. Special importance attaches to the measures affecting the medical faculties.

The purpose of these measures is indicated in official decrees bearing date July 31, 1893. These decrees provide for the reorganization of the medical courses and for a new course in the sciences pertaining to medical studies to be organized in the faculty of sciences. They are the outcome of special inquiries instituted from time to time by the Government, the last in 1892. The impulse to these inquiries came from the faculties of medicine, who complained that their students had not adequate preliminary preparation, either in the principles of science or in laboratory practice. They urged that the chairs of chemistry, physics, and natural history created in the faculties of medicine themselves were not intended for general instruction in science nor for training in methods of investigation, but as a means of making known the medical applications of science and of scientific methods. The professors supported their complaint by the statistics of the preliminary examinations for the doctor's degree, which showed that more than a third, often one-half, of the applicants failed in this test two or three times, and that a great number, discouraged by failure, gave up the effort to accomplish a medical course.

In 1890 the Government sought the opinion of the faculties in respect to measures for remedying the evils complained of. As regards the

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<sup>1</sup> 1891-92, pp. 76-95.

scientific preparation, it was proposed that a special scientific course should be opened in the lycées and a complementary course of one year in the faculties of science for students who intended to pursue medical studies. Further, that the course in medicine should be four years in duration. The response of the faculties to the official inquiry upon these points showed that while they were agreed as to the necessity of a special preparatory course in science, there were differences of opinion as to its proper place, i. e., whether in the lycées, the faculty of science, or divided between the two.

The above résumé, drawn from the report of a commission appointed to elaborate measures for the proposed reform of the medical course, brings the history of the movement to 1892, the year of the final inquiry into the subject on the part of the Government. The further history is here presented in extracts from this report, which was submitted to the supérieur council by M. Brouardel, dean of the Paris faculty of medicine, and from the report of the commission on the proposed course in science submitted to the council by M. Darboux, dean of the Paris faculty of sciences. These reports, with the resulting decrees, afford a very clear idea of the conduct of medical students in France, and also of the relations that exist in the French system between general studies, whether organized in the lycées or in the faculties, and professional studies. For the better understanding of the citations from the reports here considered it should be premised that medical instruction is the province of medical faculties, of full course schools having the same rank as the faculties, and of preparatory schools in which students may pass three years of the four required in the medical course.<sup>1</sup>

In the ministerial circular of May 9, 1892, the propositions to be considered by the commissions were submitted as follows:

(1) In the "faculties of sciences," following the full secondary or lycée course (scientific), the organization of a year's course in theoretical and practical studies comprising physics, chemistry, and natural history; this course to take the place of the baccalaureate of sciences limited (restreint)<sup>2</sup> and of the first year of the actual programme of the faculties of medicine.

(2) The organization of a four years' medical course so as to comprise therein the applications of physical and natural sciences to medicine, and such an adjustment of the examinations in these subjects as would bring a part of them into the period of medical study.

Before proceeding directly to the consideration of these propositions M. Brouardel says, with respect to possible modification of the secondary course of studies in the interests of students intending to follow a medical course:

It is to be noted that as regards the organization of the medical studies and the scientific preparation necessary to these studies, the questions put to the faculties in 1890 and 1892 are identical; the difference is only as to the preliminary secondary

<sup>1</sup>For location of medical faculties and schools see Report of the Commissioner, 1891-92, pp. 92-95.

<sup>2</sup>For explanation see p. 226.



studies. In 1890 the question was, if these studies could not stop at the class of rhetoric. In 1892 it was admitted that they must be continued through the year of philosophy. This change is accounted for by two reasons: First, in the permanent section of the superior council numerous projects have been elaborated with a view to comprising, in a single year, the class of philosophy and the preparatory year of physical and natural sciences; as this could not be satisfactorily arranged, the attempt was abandoned. Second, the faculties of medicine who had raised the question of the suppression or the transformation of the philosophical class, at last, by a great majority, decided against any modification of that class. \* \* \*

Proceeding then to the propositions before the commission, the reporter says with respect to the scientific studies preliminary to the medical:

From the replies to the circular of inquiry it appears that the faculties demand unanimously the organization of one year of preparatory study in the physical and natural sciences applicable to medicine, and, with a great majority, they desire that the same be organized in the faculties of sciences.

After having discussed the matter, your commission came to the conclusion that one of the principal causes of the failure of the previous efforts was the mixing of that which is general with what pertains specially to medicine in the same instruction; and that this confusion had prevented that profit to the medical sciences which might have been expected from these studies. Therefore the commission believes that these two parts (i. e., general and special) should be separated definitely; that only pupils already sufficiently instructed in the physical and natural sciences should be permitted to enter into the faculties of medicine; that the instruction in these sciences should be organized in the faculties of medicine with an exclusively medical view, because they are convinced that the preparatory instruction maintained in the faculties and schools of medicine would resemble too much that which up to this time has not given satisfactory results.

Passing then to the duration of studies, including in the term the preliminary general course and the strictly professional course, the report continues:

The faculties of medicine in demanding one year preparatory to the medical studies are well aware that, considering the entire course of study, they seem to increase by a year the time required under the present order. But they observe:

(1) That if the duration of the period of study seems to be prolonged by a year, this is not the case with the actual duration of the medical studies. This appears from the examination of the records of the 663 doctors examined at Paris, 1888 and 1889.

As regards the number of years spent in study, the records show the following:

From 4 to 5 years.....	61
From 5 to 6 years.....	113
From 6 to 7 years.....	142
From 7 to 8 years.....	91
From 8 to 9 years.....	61
From 9 to 10 years.....	46
From 10 to 11 years.....	51
More than 11.....	98
Total.....	663

It is evident from this statement that, of these 663 physicians, above half had devoted more than seven years to their studies; some did this in order to prepare thoroughly for the examinations for positions in the civil hospitals (*concours de l'internat*); these voluntarily, and with great profit, prolonged their studies; others

who did not desire to compete for these positions availed themselves of the laboratories freely placed at their disposal and frequented the special clinics; and, finally, others because their studies had been interrupted by sickness, misfortune, etc. For the better scholars the duration of professional studies varies between six and eight years, and in the case of those preparing for hospital service it extends often to ten years.

With respect to the division of studies and examinations in the medical course the commission say:

The student, on entering into the faculty of medicine, will begin at once the anatomical and clinical studies. In order to be ready for an examination in surgical and medical pathology at the time of the thirteenth inscription or act of enrollment (beginning of the fourth year), it is necessary that during the first three years he should pursue the hospital course (*stage hospitalier*). For the first two years he will take part in dissections in the winter semester; during the summer semester he will frequent the laboratories of histology, physiology, physics, chemistry, of medical natural history. As to these last sciences, they should be so distributed as to be pursued throughout the course, the time devoted to the demonstrations pertaining to each being properly related to the successive stages of the instruction. Thus optics and acoustics should be associated with physiology, and the student should be tested in these matters at the second examination. Medical electricity, so little understood by physicians, simply because it is not taught to the students at the moment when they might study its applications to the nervous system, should form part of the fourth examination (*therapeutique*).

The chemistry of humors and of nutrition belongs medically to the programme of physiology; their alterations to that of general or special pathology; they should be taught during the third year of the course. The applications of chemistry to therapeutics, to *materia medica*, to hygiene, to legal medicine, belong to the fourth examination. Zoology, botany, and, above all, by reason of the part which they actually play in pathology and hygiene, animal and vegetative parasites must be studied for the third and fourth examinations.

The practical laboratories actually attached to these chairs will serve to make the pupils familiar with the objects pertaining immediately to their studies. If some persons have feared that the instruction in sciences was to be abandoned, they have misunderstood the project.

French scientists having accomplished such great things for the progress of medical science by their discoveries in physics and bacteriology, it would certainly never occur to one of us to eliminate these sciences from medical studies. But we believe that speaking of the medical applications of the sciences to those who do not know the elements of medicine is an error in method; to explain these applications at the moment when the students are occupied with physiology, pathology, therapeutics, would enhance the value of the instruction and, I will add, is indispensable.

Diseases are often diagnosed by means of laboratory investigations either by chemical processes or by bacteriological examinations. It is thus, at the present time, that the diagnosis of phthisis (consumption) is decided and confirmed; thus also the nature of an epidemic is determined at its outset.

The study of the applications of physical, chemical, and natural sciences will therefore follow the student during the whole of his professional course. We have the firm conviction that by this procedure we restore the scientific studies to their true place in medical instruction.

Here follows a section of the report devoted to the consideration of the medical schools. As these are matters purely of administration they do not particularly concern us. The report concludes:

Such are, in brief, the views which have influenced all those who for several years have studied these projects of reform. If they have varied in their opinions as to

some details, they have not differed as to the end to be attained, namely, to associate the experimental sciences with the medical studies properly so called, in such a manner as to maintain the prestige of our medical instruction.

#### CERTIFICATE OF PHYSICAL, CHEMICAL, AND NATURAL SCIENCES.

The commission of which M. Darboux was the chairman was charged to examine the project of a decree relative to physical, chemical, and natural science studies as preliminary to the medical course. As explained by M. Darboux at the beginning of his report, this commission was obliged before entering upon its task to obtain the decisions of the commission whose report has just been considered.

The president of this commission [says M. Darboux] having informed us that, saving only changes in details, they had unanimously adopted the project submitted to their examination, that they proposed to reorganize the medical studies conformably to the oft-repeated views of the faculties of medicine, and that they favored the organization, outside of these faculties, of preparatory courses in physical, chemical, and natural sciences, such as might give the future physicians the knowledge of these sciences both theoretical and practical, which they must possess in order to follow successfully the medical studies properly so called, our task was very precisely defined. It only remained for us to consider the best organization of this instruction, and where it should be placed in order to produce the best results.

The detailed examination of this question led us to accept with some trifling modifications the project which had been submitted to us. To insure your approval it will only be necessary to place before you a full résumé of the discussion which took place in the commission.

We first considered what should be the nature of the new instruction. The answer to this question was indicated to us by the very terms in which it was proposed. In the project that had been reported to us, and which you had approved, the faculties of medicine retain complete control of the study of the applications of physical and natural sciences to the different branches of the art of healing, but they demand pupils already initiated into the elements of these sciences. The new instruction must, therefore, first of all, be general instruction and not instruction in applications.

But as the physician is not a man of theory, but of practice, the new instruction must not only be theoretical but also practical and experimental. It is in laboratories, in contact with a teacher, and not from books, that the pupil acquires a truly vital knowledge of experimental sciences.

Where must this instruction be placed in order that it may have, to the highest degree, this indispensable double character, that it may be at once general and practical? Only two solutions were possible—the first was to place it in the lycées and colleges, the other in the faculties of sciences.

The first of these plans being out of the question, it would be useless to reproduce here the considerations advanced in its favor but for their general bearing. They afford an interesting view of the conditions under which secondary instruction is maintained in France, of the purposes by which it is animated, and of its relations to superior instruction and to society in general. Moreover, these considerations were kept in mind by the advocates of the opposite policy, and, consequently, they are necessary to a full understanding of this side of the discussion. Hence the report is reproduced without material omissions.



One of our colleagues [says M. Darboux] gave the following reasons in favor of the first solution. The relegation of the new instruction to the lycées and colleges is necessary to maintain the equilibrium of the plan of secondary studies, so wisely organized in 1890. This plan comprehends an examination after the class of rhetoric which is common to all the students and the indispensable sanction of literary studies; then after the class of philosophy three distinct examinations, corresponding to the needs and to the aptitudes of the scholars, i. e., "Lettres philosophie," "Lettres mathématiques," and a third series which it is proposed to organize, "Lettres sciences physiques et naturelles."<sup>1</sup>

The diploma inscribed "Lettres mathématiques" is intended especially for scholars who desire to enter the "schools" (superior technical). Physical science has only small representation in this course, and natural science has not been introduced at all. Hence it follows that, unless the baccalaureate of physical and natural sciences is organized the plan of studies will remain incomplete, and the programmes of secondary instruction will be inferior in this respect to those of the primary normal schools. This baccalaureate, not yet organized, ought not to be adapted solely to the needs of the future students of medicine; it should suffice also for all students who do not need a highly extended mathematical culture, for sons of tradesmen and farmers, and for all young men who, by their aptitudes and taste, are inclined to the physical and natural sciences. The proposed measure (projet de décret) leaves these latter sciences, so far as regards secondary instruction, in a state of weakness and inferiority, which it is impossible to account for, considering their importance to society. In the lycée natural history is only taught in the philosophical class, and even there in a very elementary manner. Of what use, then, is it to establish an examination for special professors (agrégation) of natural science?

The project permits an encroachment of superior instruction upon secondary, which is to be deplored, because the studies that it is proposed to organize in the faculties of science can only be secondary in view of the scientific attainments of the young men for whom they are intended. Now all superior instruction should have a solid basis, and this secondary instruction must give.

Secondary instruction has for its end the discipline of the mind required in every order of science. This discipline is attained in the class and by exercises, by the contact of the professor and the pupil. Within the faculties this contact can not be maintained to the same degree on account of the great number of pupils, who, with far better results could be distributed among the different establishments of secondary instruction.

Why has the year of physical and natural sciences not produced better results in the faculties of medicine? Because the pupils were too numerous. The same will be the case in the faculties of science. On the other side, is it probable that parents will view the proposed measure with favor? Not only will it take the young men too early from the beneficent and necessary influence of the lycées, but it will increase the pecuniary sacrifices which they must undergo. From this point of view the project is not democratic.

From the financial standpoint also the project is disadvantageous. In the secondary course the projected instruction could be organized with less expense. A certain number of teachers do not reach the maximum working hours imposed upon them by the regulations. By completing their service and by assigning additional hours to others the expense would be very small.

The persons necessary for this are quite ready; the teachers required are already prepared; they desire the new duties; they feel that they can perform them to their own honor and also that the service now assigned to them does not accord with the qualifications demanded of them. Is their ability questioned? The success which they achieve in preparing students for the "schools" (i. e., superior technical) will suffice for an answer. This project is therefore injurious to secondary instruction

<sup>1</sup> For explanation see p. 226.

because it cuts off one of the most important branches of this course, and also, because it deprives the course of a powerful influence against the competition to which it is subject. Many pupils in private institutions look to the lycées for scientific education. To organize therein instruction in physical sciences would be to furnish to our establishments a new means of strengthening public instruction (*un nouveau moyen de propagande universitaire*). Finally the project makes the first breach in secondary instruction. Is it not to be feared that later on others will be made? Will not the transfer of the special mathematical and philosophical classes into the faculties follow? Thus are summarized, as precisely and completely as possible, the considerations presented in favor of the first solution.

Before presenting the reasons for the other solution, we will submit certain observations and statements in opposition to the above. First, there is no question at all about cutting down secondary instruction. To do this, would be to take away something from it. But what is taken away? Nothing. Where are the pupils in question? In superior instruction. It is proposed only to transfer them from the faculty of medicine to the faculty of sciences. Already students of superior instruction, they will still remain students of superior instruction.

It is therefore useless to speak of a breach in secondary instruction. Hence, also, the apprehensions expressed as to the classes of philosophy and special mathematics is chimerical. Moreover, on this subject, the administration has given the most explicit and most emphatic assurances. Not only has it never thought of transferring the classes of philosophy and special mathematics from the lycées into the faculties, but it has declared that such a project would be veritable folly, more dangerous to the interests of superior instruction than to those of secondary instruction itself.

Neither is there any question of passing the future students of medicine from the lycées into superior instruction at an earlier age than at present. This age will be the same to-morrow as it was yesterday.

But their secondary studies once terminated, philosophy once finished, once made bachelors, the young men will be admitted to the faculties. The only difference is this, for the first year, a difference in respect to place, i. e., the faculty of sciences instead of the faculty of medicine; this is not a difference in respect to age. Nor is there any ground for a question about increasing the expenses of families. Indeed your commission on the medical faculties has arranged this in the most satisfactory way—the duration of the studies will not be prolonged. I can not do better here than to refer to what has already been presented to you.<sup>1</sup>

Finally, it is useless to discuss the competency of the professors of secondary instruction. There is no reason nor ground for this. Almost all the professors of the faculties have been professors of the lycées; they remember this and feel honored by it. In their eyes public education is a unit, and they can admit no other rivalry among the different orders of education than that of devotion to the public welfare. These questions disposed of, we may consider the arguments which have prevailed in the commission.

The real matter, and the only matter to be considered, is to organize the new instruction under the conditions most favorable to its success, to the interest of the studies, and to the good of the country. In order to settle this it is not necessary to proceed with abstract definitions. Where does secondary instruction commence? Where does it finish? Where does superior instruction commence? Different theoretical answers can be given to these questions.

In a general way, as one of our colleagues remarked, that which characterizes superior instruction is not the subjects taught, but the methods. Very elementary matters may legitimately be the subjects of superior instruction if they are taught by those methods which enable the student to master them for himself. Now, such should be the character of instruction in the faculties of medicine. They demand students who combine with theoretical knowledge a certain practice in experiments

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<sup>1</sup> See p. 229.

and manipulations, that is to say, in those processes which alone enable one to explain phenomena, to truly understand them. In these matters, moreover, we must be guided not by theoretical ideas alone, but, above all, by facts. Practical matters are judged by their results; the results can only be known through facts. Let us then consider in the light of facts from which side, lyc  e or faculty of sciences, the best results may be expected.

It might be assumed that the new organization could be limited to certain lyc  es; for instance, to one for each acad  my—to that one nearest the faculty of sciences or the faculty or school of medicine. This solution would be impracticable. There are about 1,200 students of the first year in the faculties of medicine; of this number at least seven or eight hundred come from the lyc  es or colleges of the State. To distribute them as proposed, would be to have in each one of the selected lyc  es—save Paris, where there must be more—groups of sixty, eighty, or even a hundred students. Without inquiring if this would be good for the general discipline of these lyc  es, we need only ask where are the laboratories for so great a number of students? They do not exist, and they can not be constructed. Possibly, as has been suggested, those of the faculty of science might be used, but that would, in reality, place the new instruction within the faculty of sciences, while the pupils whose parents reside in other cities would live in the lyc  es.

But it would not be possible to limit the new instruction to a few lyc  es. Unfortunately, it must be introduced everywhere, in the colleges as well as in the lyc  es. Need we cite the example of the special mathematical classes, in all 47, of the special classes for St. Cyr, numbering 57.<sup>1</sup> These numbers prove that the administration is often forced to go beyond what is required.

In respect to the new course, there would be still greater pressure. If it is recognized as an integral part of secondary instruction, the demands of the families are justified in advance. Now these demands would be made everywhere, as the future students of medicine are distributed everywhere, in the colleges as well as in the lyc  es. Moreover, to say nothing of local rivalries and the inevitable effects of influence, there is also the rivalry of the private establishments. Wherever the State should refuse to have the studies preparatory to the medical course in its lyc  es and colleges, private institutions would organize them and the State would be forced to do the same. We have seen what this new instruction ought to be. Let us see what it would be under these conditions.

In order to be thorough, it ought to be, as we have said, at once theoretical, practical, and experimental. Now, in the lyc  es there is no room for the laboratories. The expenses of creating them would be considerable, and out of all proportion to the results. The material is equally lacking. There exists indeed in every lyc  e a physical cabinet, but the instruments to be put into the hands of the students for the manipulations in physics, chemistry, and natural history are wanting. They must be furnished. In estimating the expenses at 60,000 francs (\$12,000) for each lyc  e (a low estimate and probably insufficient), this would require at the outset, and without reference to sites, an expenditure of more than six millions. The colleges, it will be seen, are not considered here.

The number of professors in the lyc  es is insufficient. To raise the number of lessons to be given each professor to the highest required in his position, and in addition to charge him with supplementary lessons, would be a sorry expedient, for, to quote the words of the commission, this would be to provide for the new instruction by shreds (*rognures*); therefore it would be necessary to employ extra professors in almost all lyc  es, to say nothing of the colleges. Together with these professors, an equal number of superintendents of practical work would be required. At present there are none in the lyc  es. Two at least would be needed in every establishment—one for physics and chemistry, one for natural history. This would make more than 200 new positions still, not including the colleges. \* \* \*

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<sup>1</sup> Reference is here made to special classes in the lyc  es.



Besides this, assistants would be required; these must necessarily be specialists, and at least 200 in number for the lycées only.

Finally, there would be expenses for material for practical work in every establishment. This expenditure would be considerable. According to the most careful estimates laid before the commission, the annual expenditure, not including the cost of the first establishment, would amount to no less than 1,500,000 francs for the lycées alone. Thus, after subtracting the expenditure for tuition, every student would cost the State more than 20,000 francs (\$4,000) per year.

In view of these estimates, which have not been exaggerated, if the studies are to be properly provided for, the plan here considered is not practicable. \* \* \*

Let us now examine the other solution, namely, that of placing the new instruction into the faculty of sciences. You know what profound transformations have been accomplished in these establishments within twenty years. Everywhere the buildings have been reconstructed and enlarged; they have been supplied with large laboratories for the experimental sciences. If in some places these are still too small, the remedy is easy. It is not the same with a faculty as with the lycées, which can only be enlarged by the acquisition of territory and the construction of adjacent buildings.

A barrack on a site not far distant is sufficient. Certainly, we professors of the faculties of Paris will never forget the services rendered to superior instruction by the barracks and halls of Gerson. As to the material, it exists everywhere complete and admirable. The corps of teachers? Without doubt, it will be necessary to increase it. But this increase will be small compared with that which we examined before (i. e., with respect to lycées). The corps of laboratory chiefs and assistants? The faculties have these, both able and experienced. For fifteen years they have been developing on this side. If it be necessary to increase the force, the expense will be small compared with that which would be necessary in the lycées and colleges. Finally, the faculties have ample resources to meet the annual expenditure for laboratories and practical work.

According to the estimates laid before the commission, the increase of expenditure will not surpass the increase in receipts.

Considered from the intellectual standpoint, the faculties of science are thoroughly competent, even better prepared for insuring the discipline of the mind in any particular order of sciences than was deemed necessary by one of our colleagues, who proposed to place the new course in the lycées. Such a discipline results less from the effect of the lesson given by the teacher than from his contact with the student, and the atmosphere in which the student lives.

Now those professors of the faculty who have devoted themselves to the experimental sciences live in their laboratories with their assistants in constant communication with their pupils. In these laboratories the students are, as it were, enveloped in science; they handle the apparatus; they see it in action; everything speaks of their specialty, the material as well as the teachers. This is the only place indeed where they can be filled with the spirit of science and thoroughly comprehend it.

Moreover, we have something more and better than hopes and promises. The administration was of the opinion that, in a matter like this, experience was desirable. With the assent of the permanent section of the superior council of education an experiment has been made at Toulouse. Now for three years in that city students of medicine have received during their first year instruction in physical, chemical, and natural sciences in the faculty of science. The experiment has succeeded; the results are entirely satisfactory. The deans of the faculty of medicine and of the faculty of sciences charged one colleague, who belongs to the faculties of Toulouse, to inform us as to the results. We cite the facts in support of the project. It remains to submit the considerations as to another matter with which the commission was especially charged. The course to be created is a general one. Although intended for the future physicians, it may also serve others. Besides the young men who enter

into the special schools, as the Central School and the Agronomic Institute, a great number of those destined for industrial or agricultural careers will need corresponding practical instruction.

Some faculties of science—Lyons and Nancy for instance—have voluntarily tried to meet this requirement. Experience has shown that those students to whom these faculties have given instruction, practical indeed, but general in its nature, have been very successful in industry. It has seemed to us that, in this respect, the new instruction might produce excellent results. While giving indispensable scientific preparation to the future physicians it will also give equal preparation to others, and thus become, in certain centers, the basis of technical instruction, which will be advantageous for our national industries. Thus the particular conditions for acquiring the degree of doctor of medicine being determined by a special decree, we recommend that the proposed courses be open to the bachelors of all orders. We go further, in the true spirit of sound democracy, and, supported by the results already obtained at Lyons and Nancy, we recommend also that this course be opened to select pupils from the primary schools who pass the required tests.

We shall be glad to see this union established between superior and primary instruction, as it will certainly be useful to both of them. The faculties, having been freely consulted in this matter, according to the liberal policy of the Government, have agreed to accept the new responsibility. They have already a well-defined purpose, i. e., that of preparing candidates for the degree of *licencié*, for the examinations for special professorship (*agrégations*), for the doctorate, and for special research.

They will maintain this service and will discharge it as heretofore. They have already a large attendance upon these courses, not less than 1,800 students. In enlarging their province, in placing beside their highest instruction courses more elementary and experimental work of a modest character, but so useful that the most experienced professors will willingly bear part in them, the faculties are conscious that they will fill up a gap in our educational provision and at the same time meet a pressing demand of the time.

It is impossible to overestimate the ever increasing part which pure science must bear in the activities and industries of our society. The remarkable development of industrial chemistry in a neighboring country, of electrical industry in all countries, has been brought about by men, whether chiefs or subordinates, who have followed university courses or who have come from institutions directed by university professors. In exchange for all that the country has done for them, our faculties desire to render an equivalent service. This they will do by imparting to the future physicians the indispensable knowledge of the sciences called accessory, but which we will rather call fundamental, by bringing artisans and agriculturists into the current of scientific method, and also, they hope, in some instances at least, by developing eminent savants, whose abilities would otherwise remain dormant and useless.

In view of these considerations, your commission recommend to you, almost unanimously, and saving only some changes of detail, the adoption of the project "laid before you."

As a result of the reports cited, and in accordance with the advice of the superior council of public instruction, the President of the Republic issued the two following decrees, dated both July 31, 1893:

DECREE REGULATING THE COURSE OF STUDY AND THE EXAMINATIONS REQUIRED  
FOR THE DEGREE OF DOCTOR OF MEDICINE.

ARTICLE 1. The studies for obtaining the degree of doctor of medicine continue four years. They can be pursued during the first three years in a preparatory school of medicine or pharmacy; during the fourth year in a faculty of medicine, in a

mixed faculty of medicine and pharmacy, or in a full-course school of medicine and pharmacy.

ART. 2. The candidates for the doctorate in medicine, in order to take their first inscription, have to attain the diploma of a bachelor of secondary classical instruction (*lettres-philosophie*) and the certificate of physical, chemical, and natural sciences.

ART. 3. They must undergo five examinations and sustain one thesis.

ART. 4. The examinations comprise the following topics:

First examination: Anatomy, omitting topographic anatomy; practical test in dissection.

Second examination: Histology, physiology, in which are comprehended biologic physics and biologic chemistry.

Third examination: First part, surgery and topographic anatomy, surgical pathology (*externe*), *accouchements*. Second part, general pathology, animal and vegetable parasites, microbes, medical pathology (*interne*), practical test in pathologic anatomy.

Fourth examination: Therapeutics, hygiene, medical law, *materia medica*, pharmacology, with the applications of physical and natural sciences.

Fifth examination: First part, clinics (*externe*), obstetric clinics. Second part, hospital clinics; thesis upon a subject chosen by the candidate.

ART. 5. The first examination must be taken between the sixth and eighth inscription (terms); the second, between the eighth and tenth; the third, between the thirteenth and sixteenth; the fourth and the fifth, after the sixteenth.

ART. 6. The records made by the candidates, whether in practical work, in recitations, in clinical service, where they have been regularly admitted as probationers, are communicated to the examiners by the dean, and count in the examination.

ART. 7. The students admitted to the full-course schools and to the reorganized preparatory schools undergo the first and second examinations before the school to which they belong.

ART. 8. The president of the examining jury is a professor of the faculty, delegated by the minister.

Immediately after the examinations the president of the jury sends a report of the results of the same to the minister.

ART. 9. The sessions of the examination take place in the schools, full-course and reorganized preparatory, twice a year, at dates fixed by the minister.

ART. 10. The students admitted to the preparatory schools which are not reorganized undergo the first and second examinations before a faculty at the times fixed by article 5. In case of adjournment, they must appear before the same faculty.

ART. 11. The practical work in dissection in the laboratory and in the hospital service is obligatory. The hospital practice must continue at least three years; it must comprehend at least three months' practice in obstetrics.

A ministerial order will determine the time to be given to dissection and to other Practical work.

ART. 12. The fourth and fifth examinations and thesis must be sustained before the same faculty.

ART. 13. The present decree takes effect November 1, 1895.

The candidates admitted before this date will take their examinations according to the decree of June 20, 1878. In order to be admitted they must possess either the degree of bachelor of sciences or of bachelor of secondary classical instruction (*lettres-philosophie*), and of bachelor of sciences limited as to mathematics.

ART. 14. All previous provisions contrary to those of the present decree are and remain abrogated.

ART. 15. The minister of public instruction, of liberal arts and culture, is charged with the execution of the present decision, which will be inscribed into the bulletin of the laws and published in the official journal.



DECREE RELATIVE TO SPECIAL SCIENTIFIC STUDIES REQUIRED FOR ADMISSION TO  
THE MEDICAL COURSE.

ARTICLE 1. There is instituted in the faculties of sciences a preparatory course of physical, chemical, and natural sciences.

ART. 2. To this instruction are admitted young men provided with a diploma of bachelor, and, after examination by the faculty, young men of at least seventeen years of age, provided either with the superior certificate of primary instruction or with the certificate of superior primary (high school) studies.

ART. 3. At the end of this course, and after examinations passed before the faculties of sciences, a certificate of physical, chemical, and natural studies is delivered.

ART. 4. In order to be admitted to the examination, the candidates must show that they have paid the fees for four successive terms (inscription) and taken part in the practical work.

ART. 5. The examination is passed before the faculty in which the candidate has taken the four inscriptions (been enrolled four terms). It comprises questions and practical test in physics; questions and practical test in chemistry; questions and practical test in zoology; questions and practical test in botany.

All this according to programmes which will be determined by a ministerial order.

ART. 6. The jury is composed of three members of the faculty.

ART. 7. The instruction instituted by the present decree may be organized near the medical schools, and near the reorganized preparatory schools situated in those cities where faculties of sciences do not exist. The examinations take place under the presidency of a professor of a faculty of sciences delegated by the minister.

ART. 8. The minister of public instruction, of liberal arts and culture, is charged with the execution of the present decision, which will be inserted in the bulletin of the laws and published in the official journal.



## CHAPTER VI.

### EDUCATION IN ONTARIO, NEW ZEALAND, AND INDIA.

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#### I.—SYSTEM OF EDUCATION IN ONTARIO.

(Salient features of the system as presented by the deputy minister of education, Mr. John Millar, B. A. Current operations as set forth in an address by the minister. Hon. George W. Ross.)

The Dominion of Canada comprises the seven Provinces—Quebec, Ontario, New Brunswick, Nova Scotia, Prince Edward Island, Manitoba, and British Columbia—each of which has its separate system of public instruction. The system of Ontario possesses peculiar interest for us on account both of the features in which it resembles and those in which it differs from the systems in our own States. A very complete exposition of the Ontario system, prepared by the deputy minister of education, Mr. John Millar, has recently been published by the Ontario education department. The salient features of the system, as set forth in this monograph, are as follows:

*Origin.*—The system of education in Ontario may be said to combine the best features of the systems of several countries. To the Old World it is indebted for a large measure of its stability, uniformity, and centralization; to the older settled parts of the New World for its popular nature, its flexibility, and its democratic principles, which have given, wherever desirable, local control and individual responsibility. From the State of New York we have borrowed the machinery of our schools; from Massachusetts the principle of local taxation; from Ireland our first series of text-books; from Scotland the cooperation of parents with the teacher in upholding his authority; from Germany the system of normal schools and the kindergarten, and from the United States generally the nondenominational character of elementary, secondary, and university education.

Ontario may claim to have some features of her system that are largely her own. Among them may be mentioned a division of state and municipal authority on a judicious basis: clear lines separating the function of the university from that of the high schools, and the function of the high schools from that of the public or elementary schools; a uniform course of study; all high and public schools in the hands of professionally trained teachers; no person eligible to the position of



inspector who does not hold the highest grade of a teacher's certificate, and who has not had years of experience as a teacher; inspectors removable if inefficient, but not subject to removal by popular vote; the examinations of the teachers under provincial instead of local control; the acceptance of a common matriculation examination for admission to the universities and to the learned profession; a uniform series of text-books for the whole Province; the almost entire absence of party politics in the manner in which school boards, inspectors, and teachers discharge their duties; the system national instead of sectarian, but affording under constitutional guarantees and limitations protection to Roman Catholic and Protestant separate schools and denominational universities.

*Unity.*—The three main features of elementary, secondary, and higher education are clearly defined in the system adopted in Ontario. It is held that each of these has its own proper field and that no one of them should trench upon the grounds of another. It is also intended that there should be, as far as possible, no overlapping of the courses of study. The system includes the kindergarten, public and separate schools, high schools and the collegiate institutes, and the university. These may be regarded as an organic whole. The child enters the kindergarten at perhaps 4 years of age, and the public school at 6, and is prepared, about the age of 13, to be admitted to a high school. Four or five years at the high school or collegiate institute enables him to matriculate in the university, where he attends four years and gains his B. A. degree. This course, if taken in full, gives him superior educational advantages for taking up the study of his chosen profession or entering upon the calling in life to which his mind is directed.

As only a small percentage of the youth of any country can reach the highest rung of the educational ladder, the curriculum is so arranged as to afford, as far as possible, no misdirected steps to those who do not take the full course. As the great body of the people must be the "breadwinners," and from necessity never reach the high school, the course of study for the elementary schools is limited to a few subjects of the most practical character, the three "R's" receiving special prominence. Moreover the curriculum of the high schools in the lower terms puts stress upon English, arithmetic, geography, history, elementary science, bookkeeping, drawing, reading, and physical education.

The principles of our system of national education favor no class or sect. "The rich and the poor meet together." Private schools have been successful only in rare instances. The high school has been called the "poor man's college," on account of the general desire in the community to exact low fees from students, and in many instances to charge no fees. The highest distinctions in the university are most frequently gained by the sons—and daughters, too—of workingmen.

No part of the system can do without the others. To the high schools the public schools are indebted for their efficient army of well-

educated teachers. In like manner the university furnishes in the persons of its graduates the well-trained principals and assistants of our high schools and collegiate institutes. The secondary schools, in turn, supply the university with hundreds of well-prepared matriculants. To improve the university is to give an impetus to the high schools, and to render the latter more efficient tells likewise upon the character of elementary education. If one member of the body suffers, all the other members of the body suffer with it. It is thus that all departments of the system form a harmonious unity, and it is thus the functions of each have come to be fully recognized and clearly understood.

*Relations to municipalities.*—The municipal system of Ontario affords a full measure of local self-government. The Province is for the most part divided into counties, which are subdivided into minor municipalities, consisting of townships, incorporated villages, towns, and cities. These corporations are given certain powers, and have certain responsibilities with respect to education. Through their municipal councils, counties are under obligation to make grants of money to high schools, and both counties and townships must contribute certain sums in aid of public schools. Each township is divided into school sections, and each of these sections is provided with a public school. There is a board of trustees for each school section, incorporated village, town, and city. Much the greater part of what is expended for public schools is provided by the school section, village, town, or city.

The ratepayers (men and women) elect the trustees who, within the provisions of the provincial statutes or regulations of the education department, appoint the teachers and determine the amounts to be expended for buildings, equipments, and salaries. It thus follows that the system of education in Ontario is essentially democratic, and in those matters which affect the sentiments or touch the pockets of the people, each locality has almost entire control. It is not, however, considered wise to decentralize as regards the granting of certificates to teachers and inspectors, the authorizing of text-books, the fixing of courses of study, and the prescribing of the duties of trustees, inspectors, and teachers. These are questions which, though still under the control of the people, are regulated by a responsible government.

*Relations to churches.*—There is no established church in Ontario, or connection between church and state. The constitution gives the Province control of its educational affairs, and the great majority of the people believe that schools and colleges should be nondenominational. No religious body has any voice in the management of the high and public schools or the university. These institutions are, however, far from being "Godless" or irreligious. Though not religious, they are institutions of a Christian people. The doctrines of no church are taught, but the principles of Christianity form an essential feature of the daily exercises. The teachers are, with very rare exceptions, men



and women of high moral character. The cooperation of the clergy of all denominations in educational gatherings is quite common, and recognition of religion is fully shown in the following regulations which have been prescribed by the education department:

(1) Every public and high school shall be opened with the Lord's Prayer and closed with the reading of the Scriptures and the Lord's Prayer, or the prayer authorized by the department of education.

(2) The Scriptures shall be read daily and systematically without comment or explanation, and the portions used may be taken from the book of selections adopted by the department for that purpose, or from the Bible, as the trustees, by resolution may direct.

(3) Trustees may also order the reading of the Bible or the authorized Scripture selections by both pupils and teachers at the opening and closing of the school, and the repeating of the Ten Commandments at least once a week.

(4) No pupil shall be required to take part in any religious exercise objected to by his parents or guardians, and in order to the observance of this regulation, the teacher, before commencing a religious exercise, is to allow a short interval to elapse, during which the children of Roman Catholics and of others who have signified their objection, may retire.

(5) If in virtue of the right to be absent from the religious exercises any pupil does not enter the schoolroom till fifteen minutes after the proper time for the opening of the school in the forenoon, such absence shall not be treated as an offense against the rules of the school.

(6) When a teacher claims to have conscientious scruples in regard to opening or closing the school as herein prescribed, he shall notify the trustees to that effect in writing, and it shall be the duty of the trustees to make such provision in the premises as they may deem expedient.

(7) The clergy of any denomination, or their authorized representatives, shall have the right to give religious instruction to the pupils of their own church, in each schoolhouse, at least once a week, after the hour of closing the school in the afternoon, and if the clergy of more than one denomination apply to give religious instruction in the same schoolhouse, the board of trustees shall decide on what day of the week the schoolhouse shall be at the disposal of the clergyman of each denomination at the time above stated. But it shall be lawful for the board of trustees and clergymen of any denomination to agree upon any hour of the day at which a clergyman, or his authorized representative, may give religious instruction to the pupils of his own church, provided it be not during the regular hours of the school. Emblems of a denominational character shall not be exhibited in a public school during regular school hours.

The imperial statute, called the British North America act, which united the Provinces forming the Dominion of Canada, guaranteed certain educational privileges to the Roman Catholic citizens of Ontario. The separate schools act, as it is termed, enables Protestants, as well as Roman Catholics, to establish, under certain conditions, schools for themselves. In these schools, in addition to the ordinary course of study for public schools, religious exercises are taken up under the direction of the trustees. The education department has not the same authority under the statute over Roman Catholic separate schools as it has over the public schools, yet in the main features—such as the qualification of teachers, excepting those in religious orders, the selection of text-books, except those required for religious exercises—the



authority of the department may be said to be the same. There is no provision in the constitution allowing the establishment of separate high schools, and any private or denominational institutions of this kind which have been established receive no legislative aid, nor are their supporters exempted from taxation for the national schools.

The Roman Catholics have shown as little disposition as the Protestants to establish denominational schools for secondary education, and the verdict of all classes appears to be that religious convictions are not interfered with, and that Christian principles are strengthened by attendance at the high schools and collegiate institutes. A few church schools have been opened for boys and several ladies' colleges have been established by different denominations. The course of study in these institutions is, in many respects, similar to that in the high schools, and the students frequently write at the same university and departmental examinations.

The Provincial University is also nondenominational. All the churches are well represented among its alumni. The arts course has been taken up by Episcopalian, Presbyterian, Methodist, Baptist, and Roman Catholic candidates for the ministry before attending the theological colleges of their respective denominations. No religious tests are required of the professors, who, in fact, represent different denominations, and, in many instances, have identified themselves with the work of the different churches. An important adjunct to the university is a flourishing Young Men's Christian Association, which has been of much service as a religious and moral bond of union among the students.

The wishes of those who prefer attendance at a denominational university are well met by the several institutions of the kind that have been established, viz: Ottawa University (Roman Catholic), Queen's University (Presbyterian), Trinity (Episcopalian), the Western University (Episcopalian), Victoria University (Methodist), now federated with Toronto, and McMaster University (Baptist). These are sustained by private endowments or grants made by religious bodies. No financial assistance is given them by the State. The course of study is, as a rule, the same as in the Provincial University and University College, except that some options of a denominational character are allowed. They have all accepted a uniform matriculation examination held by the education department and Toronto University. No religious tests are required, and the degrees have the same legal value as those given by the Provincial University.

*Relations to parents—Compulsory education.*—It is held to be the duty of the State to provide free elementary schools. To allow children to grow up in ignorance is detrimental to the interests of the community. All persons are taxed to support education, because its general diffusion is for the public good. It is held that compulsory education is a necessary corollary of free education. If the State gives the boon of

free schools to all, it has a right to see that the expected advantages are realized. On this principle the truancy and compulsory education act of 1891 was passed. This statute combines the best features of the laws of Great Britain on the subject, as well as those of the principal States of the American Union. By this act all children between the ages of 8 and 14 are obliged to attend school for the full term during which the school is open, and parents or guardians who fail to send their children are subject to penalties. The rights of conscience are sufficiently guarded. Penalties are not inflicted if the child is under efficient instruction at home, or unable to attend through sickness or other unavoidable cause, or is excused by a justice of the peace or by the principal of the school, or if he has passed the high school entrance examination.

Any person employing a child under 14 years of age, during school hours, is liable to a penalty of \$20. When the services of a child are deemed urgent, an absence from school for six weeks of the term may be granted. Provision is made for sending a child who is vicious and immoral to an industrial school. To nip truancy in the bud is regarded as the most effective means of preventing a recourse to the penalties of the act. Truant officers must be appointed for every city, town, and incorporated village, and may be appointed for every school section. These officers are vested with police powers, and have authority to enter factories, workshops, stores, and other places where children may be employed, and ascertain whether there is any violation of the act. Regulations may be made by the local authorities for the better enforcement of the statute. The truant officers must report annually to the education department according to prescribed forms.

*Separation from municipal and party politics.*—The system of education in Ontario is remarkably free from politics. \* \* \* School trustees are not selected from our municipal councils, and in the case of high school boards and boards of education the members can not hold at the same time positions in the municipal council of the municipality or county in which the high school is situated. The candidates for political honors or the "wire-pullers" of a political party have scarcely any chance to advance their interests by bringing party politics into the domain of school management. Inspectors are not selected by popular vote. No person can be appointed as inspector who has not a certificate showing that he has attained to the highest rank as a public school teacher. \* \* \*

Boards of education have nothing to do with fixing the standards of examinations or awarding certificates. The graduates of the high school, which is controlled by the trustees, must attend a training school before being eligible for positions in the gift of the board. In the case of public schools the inspector, or in the case of high schools the principal, is properly consulted regarding appointments. It is safe to say that rarely does an inspector or high school principal make his



recommendations through political motives, or make himself obnoxious to a section of the community by taking a part in the "party caucus" or political campaign. Appointments are almost invariably made on the ground of fitness, and even though personal motives and preferences may influence trustees, the fact that a candidate for a position takes an active interest in politics would prove fatal to his success even among his political friends. It is not intended to convey the impression that teachers or inspectors are debarred from any rights as citizens in the study of political questions, or the expression of their political views. It is only meant that their positions render it injudicious for them to alienate a part of the public by actively indulging in the strife of party warfare, and that inspectors or teachers who do so find their usefulness gone.

*Education department.*—By an act of the legislative assembly of the Province the educational department is intrusted with the administration of the school law. The department consists of the members of the executive government, and its head, as already stated, is the minister of education. Subject to the provisions of any statute in that behalf, and the regulations of the department, there may be established the following schools: (1) Kindergartens, (2) public schools, (3) night schools, (4) high schools and collegiate institutes, (5) art schools, (6) county model schools, (7) normal schools, (8) schools of pedagogy, (9) teachers' institutes, (10) mechanics' institutes, (11) industrial schools.

It is the duty of the minister to direct all the educational forces in the country; first, from his place as a member of the legislative assembly, and secondly, through the officers of his department. From the discussions of educational questions in the provincial parliament, his position as a member gives him the best facilities for recognizing the working of the school law and ascertaining the trend of public opinion. As the head of his department, his constant official intercourse with trustees, inspectors, and teachers gives him the greatest opportunity for prescribing from time to time whatever amendments to the regulations may be considered wise in the interest of high and public schools. From the wide sweep of the legislation which he is expected to direct, and from his position as a member of the government responsible to the people's representatives, he is able to advance such legislation as will guard the unity of the system and preserve its symmetry, as well as prevent any needless innovation from pseudo-reformers or visionary meddlers. Extensive powers are given to the education department, but every regulation or order in council made under the statute giving it an existence, or under the public, separate, or high schools act must be laid before the legislative assembly. It has power, subject to the provisions of any statute in that behalf, to make regulations—

(1) For the classification, organization, government, and examination of all schools and institutes in the preceding section mentioned, and for the equipment of school-houses and the arrangement of school premises;



(2) For the authorization of text-books for the use of pupils attending such schools or institutes and for the selection of books of reference for the use of teachers and pupils, and school libraries;

(3) For determining the qualifications and duties of inspectors, examiners, and teachers of such schools and institutes, and for the appointment from time to time of such examiners as may be requisite for that purpose;

(4) For the payment of the pensions of superannuated inspectors and teachers, and the proper distribution of all moneys set apart by the legislative assembly for school purposes;

(5) For extending, on the petition of a board of school trustees, and on such evidence as to efficiency as may be deemed necessary, any third-class certificate issued under the authority of the public schools act;

(6) For the study of agriculture and for scientific instruction as to the nature of alcoholic stimulants and narcotics with special reference to their effect upon the human system.

The education department has power also—

(1) To appoint inspectors of high schools, separate schools, and county model schools, masters of normal and model schools, and directors of teachers' institutes;

(2) To affiliate with the schools of pedagogy such high schools or collegiate institutes as may be necessary for practical instruction in the art of teaching;

(3) To determine the fees to be paid by candidates at departmental examinations;

(4) To accept in such subjects as may be deemed expedient the examination of any university in the British Dominions in lieu of the departmental examinations;

(5) To prescribe such forms for school registers and departmental reports as may be deemed expedient;

(6) To accept, on passing the annual departmental examination, the professional or training certificate of any normal school or other training institution in the British Dominions.

The minister of education makes an annual report to the lieutenant-governor upon the schools and other institutions under the control of his department with such statements and suggestions for promoting education generally as he may deem useful and expedient. He has power to decide upon all disputes and complaints laid before him, the settlement of which is not otherwise provided by law, and upon all appeals made to him from the decisions of any inspector or other school officer.

#### PRESSENT STATUS OF THE SYSTEM.

The following review of the operations of the system was presented before the legislature by the minister of education, Hon. George W. Ross, in submitting the estimates for 1894. The value of this survey is enhanced by comparative statistics and by the discussions of topics of vital interest in all systems:

The estimates for educational purposes may be conveniently grouped under four heads: (1) Grants to elementary schools; (2) grants to secondary schools; (3) grants for the training of teachers; (4) grants for technical education.

The grants for elementary education are divided principally among three classes of schools—public schools, separate schools, and poor schools. There is, in addition, a small grant for kindergartens and night schools, and for pupils in the highest form of public and separate schools who pass the leaving examination.

By statute the amount appropriated for public and separate schools is divided on the basis of average attendance in each respectively. The amount paid to public schools in 1893 was \$222,844.45, and the amount to separate schools \$18,491.60. The Roman Catholic separate schools received over one-thirteenth of the money voted by the legislative assembly, while the Roman Catholic population of the Province is about one-sixth.

Although the amount given for elementary education is not as large as one would desire, still, having regard to the increase of the population, the legislature can not be said to be remiss in its duty. In 1871 the amount paid by the Government for elementary education was \$178,975. This sum steadily increased, until in 1893 it amounted to \$291,325, or an increase of 62 per cent in the last twenty years, while the pupils enrolled have increased only 7 per cent.

There has also been a very substantial increase in the aid given to poor schools. Beginning with \$5,990 in 1871, this grant has increased until it now reaches \$45,000. From the reports of the inspectors I am led to believe that no money voted by the legislature is more gratefully received or more economically expended. In spite of all we have done for the settlers in the northern districts in the way of railways and colonization roads, they still suffer many of the inconveniences incident to pioneer life. By means of the grants given by the Government the burdens of taxation for education have been greatly lightened, and schools are now established as far west as the Rainy River district under teachers of recognized ability, and this year we hope to be successful in establishing a public school on the shores of James Bay. These schools were attended last year by over 10,000 children, and, although the attendance was not as regular as in the settled districts, I am satisfied from the reports of the inspectors that the pupils are steadily advancing in their studies.

The attendance at night schools was till two years ago regarded as attendance at the public school, and consequently they shared in the grant to public schools on the basis of average attendance.

Three years ago the legislature, feeling the importance of affording greater encouragement to such schools, appropriated a small grant which went directly to the board of trustees for the purpose of defraying necessary expenses. The number of night schools established and receiving aid in 1892 was 32, and the number of pupils in attendance was 2,293. It is proposed to continue the grant, as without it many young men and women, belonging especially to the working classes, would be placed at a disadvantage as compared with those who are able to attend school during the day.

#### KINDERGARTENS.

Just before I took charge of the education department my predecessor had taken steps for the introduction of the kindergarten system of instruction into the schools of Toronto. Such schools were sanctioned by the public schools act under the name of "Infant schools." As this term had no distinctive meaning in this Province, the school act of 1885 was amended to provide expressly for the establishment of kindergartens. So far as I know the Province of Ontario was the first Province or State on the continent to recognize as part of its school system the philosophical teachings of Froebel and Pestalozzi. Even in Germany the kindergarten system has received no State recognition, such schools, though largely attended, being private undertakings. The growth of the kindergarten system is remarkable. In 1882 the first kindergarten was opened in the city of Toronto; now, in 1893, we have 85 kindergartens, with 200 teachers, attended by 8,056 pupils. Kindergartens have been established in nearly every city in the Province and in several of the larger towns, and I understand they meet with the cordial approval of the ratepayers, are found to be very stimulating to the teachers, and have greatly developed kindly methods of discipline in the management of our schools.

## SCHOOL ATTENDANCE.

The percentage of pupils enrolled in proportion to the population of the country furnishes gratifying evidence of the interest taken by all classes in the education of their children. In this respect Ontario leads all the Provinces of the Dominion and nearly every State of the Union. Iowa is the only State that surpasses Ontario in its zeal for elementary education. Let me give a few comparisons:

Out of her whole population Ontario sends to her elementary schools 24.95 per cent; Maine, 21.13; Illinois, 20.34; Michigan, 20.39; New York, 17.38; Ohio, 21.71; Massachusetts, 16.95; Iowa, 25.80.

An important feature in connection with the enrollment is the relative length of the school year in Ontario and the United States. In Maine the average length of the school year is less than 6 months; in Connecticut, 10 months; in Illinois, 7½ months; in Iowa, 7½ months; in Massachusetts, 8 months; in New York, 9 months. The average for the whole United States was only 134 days, or less than 7 months, against 208 days, i. e., a trifle over 10 months, in Ontario. The average number of days which a pupil in the United States attends a public school is 87½ days in the year; in Ontario the average number of days is 112½, or a trifle over 5½ months. In rural districts the average is largely reduced by the irregularity of pupils in the newer districts, and even in the most favored portions of Ontario the severity of the winter seriously affects school attendance. In cities and towns the average in some cases reaches as high as 75 per cent of the aggregate, or an average of 150 days in the year for each pupil.

There are two reflections germane to the subject of school attendance worthy of notice: First, with the irregularity of attendance there is a great loss of teaching force, and a necessarily imperfect development of the child's education. We paid last year \$2,752,629 for the salaries of the teachers employed in the education of half a million of children. Less than half of the number of pupils attended school the whole year, consequently one-half of the sum expended on teachers' salaries must have produced very unsatisfactory results, and one-half the children at school, no matter how zealous the Government or the education department may be, must have received but a very imperfect education. The second reflection is that a child who devotes himself to study on an average of 120 days in the year, that is, less than one-third of the whole time, is not in very great danger of suffering either mental or physical disability from the alleged overpressure of our school system. Even admitting that examinations are exacting and home lessons sometimes unreasonable, one day's study, six hours at school, and two days off, for that is what it amounts to, is not very taxing.

The Germans are a vigorous people, possessed of great vitality and energy, yet the schools of Germany show an average attendance of 78 per cent, with much longer hours of study than we prescribe. Ordinarily, the German schools open in summer at 7 o'clock in the morning and close at 4 o'clock in the afternoon, with two hours of recess during midday. In winter the hours are shorter, but by their continuation system, like our night schools, the studies of the pupils are continued during the evenings just as rigidly as during attendance at the public school in the daytime.

## TRUANCY ACT.

By the truancy act of 1891 an attempt was made to improve the compulsory features of our school law. I think the experience of the next few years will show that the small residuum of truant children, whose evil habits the act was intended to correct, has been very much reduced. The rigid enforcement of the act by the public authorities, I am convinced, will have a very salutary effect upon the indifference of both parents and children. The number of convictions in 1891 was 7, and in 1892, 49.



## PROGRESS IN ADVANCED SUBJECTS.

There has been a gratifying increase in the number of pupils studying the advanced subjects in the public school course, such as history, geography, and grammar. Taking the statistics contained in the annual report of the inspectors as a basis, it is beyond question that the attainments of the pupils of the public schools of the Province are considerably higher than they were ten or fifteen years ago. In every advanced subject of the course there has been a large increase in the number of pupils. Even in the fifth form, which the department was said to regard with some indifference, there has been an increase of over 3,000 pupils in the last five years, although there have been drained from the public school to the high school in the same period about 8,000 pupils a year, who, had they remained in the public school, would have entered the fifth form.

## CANADIAN HISTORY.

It is particularly gratifying to notice the increased interest taken in the subject of Canadian history—a subject which was first made compulsory for entrance to high schools by the regulations of 1885. In 1886 this subject was taken by 67,682 pupils; in 1892 it was taken by 135,968. It is impossible to estimate the effect which the study of the history of our own country will have upon the minds of those who are to be the future citizens and rulers of Canada. I believe that much of the wonderful power the American Republic has shown in absorbing and assimilating the large foreign population which has drifted into the Republic from all parts of the world was owing to the efforts made in the public schools of the United States to impress the school children with the advantages of republican institutions. Her great men formed the subject of anecdote and sketch in every text-book; her struggle for independence, the courage of her generals, the eloquence of her statesmen, her literature, her natural resources, in fact, everything she was and everything she expected to be, were made the subject of study and of declamation, and every child on leaving school was made to feel that the American Republic, if not representing the whole world, represented at least the most important part of it.

In the same way the study of the history of the Fatherland is made an important part in the curriculum of all the schools of Germany, from the *volkschulen* to the *gymnasien*. In her dark days, when humbled and crushed by the first Napoleon, Frederick William announced to his disconsolate subjects “the State must make good through intellectual power what it has lost in physical strength,” and straightway began the organization of a school system of which loyalty to the German Empire may be said to be one of its corner stones. From its earliest history down to its triumphs before Sedan every event calculated to stimulate attachment to his native land or to increase his admiration of the national character of the great leaders of public opinion is daily presented to the pupil for the purpose of strengthening his interest in the country to which he belongs.

In England, strange to say, the subject of British history occupies a secondary place in the school curriculum. It is at present an optional subject, and the only incentive to teacher or pupil to take it up is the mercenary one that by so doing the school will receive a larger grant. Out of 5,006,979 pupils enrolled in the schools of England and Wales in 1892 only 90,070 pupils were presented for examination in all the specific subjects, English history being one of these subjects. It is but proper to say, however, that a series of readers in British history is required to be used in every school from the second standard upward, so that much of the knowledge obtained in this country by the use of a text-book in British history is obtained in England by the use of readers specially prepared and which are supplementary to the ordinary school reader.

A few months ago, when the education department relieved candidates for entrance to the high school from an examination in British history in order that greater attention could be given to the study of Canadian history, an outcry was raised by the

opposition press and the historic charge of disloyalty was hurled against the Government. It may be that in its zeal to promote a Canadian sentiment the education department went too far in the first instance to make Canadian history compulsory. It may be that the practice of other nations, such as the United States and Germany, who had to deal with mixed communities, as we have in Canada, was at fault. It may be that to embody in the regulations of the department a course of study which presupposes greater attachment to our own country than is required by the department of education of England and Wales, was too great a stride for this generation to take; but whatever may have been the motives which governed the department, certain it is that at no previous period in the history of Canada has there been so much attention paid to the history of our own country, its relations to the British Empire, and the position it is destined to occupy, if it is true to itself, in the future of this continent.

The object of relieving the pupils from the examination in British history was to give the teacher greater freedom in dealing with the subject and the pupils greater zest in its study. It is possible so to load our pupils with examinations as to make school life irksome and repulsive, and if there is one department more than another where the method of the examiner is calculated to destroy interest in a subject, it is in the study of history. Examinations in history can not be framed so as to develop in the children either the true spirit of the historian or to disclose to their minds the aspirations which culminate in the great events which it records. The child may get that for himself by reading and meditation; he ought to get it from the teacher; he can not get it from the examiner.

I hope, therefore, it will not be many years till we can say to the teachers of Ontario, "We have confidence in your work without an examination," and to the school children of Ontario, "Read the history of Great Britain for the purpose of absorbing the spirit of her institutions, the temper of her statesmen, and the courage and freedom-loving disposition of her people, and repeat it in the experience of Canada, clarified and sublimated by the genius of our own institutions, and you will have what is best in humanity and what is best in government as well."

#### PHYSIOLOGY AND TEMPERANCE.

I can not dismiss this part of my subject without a word or two as to the extent to which physiology and temperance are receiving the attention of our public school. It was in 1886 that authority was given the education department to provide instruction in this subject. Since that authority was given a text-book was prescribed, and although for several years the subject was optional, it was believed that public opinion would justify its being made compulsory, and this was done accordingly by the regulations of last August.

Out of 201,649 who were required under the regulations to study this subject, 171,594 were reported as receiving the requisite instruction. In addition to the study of the subject in the public school, provision was made for the instruction of teachers at normal and model schools, and every teacher since 1887 who has received a certificate from the education department has been required to pass an examination as to his knowledge of the principles of physiology and temperance. Is it too much to expect that this action of the department will greatly aid the enforcement of any legislation that may be required further to restrain the liquor traffic?

#### COURSE OF STUDY.

The course of study for the public schools has been very much simplified within the last ten years. The opinion at one time evidently prevailed that almost every subject within the range of human knowledge should be taken up in the public school. In 1871 our school curriculum consisted of fifteen subjects, all of which were obligatory, requiring the use of 24 text-books at a cost of \$10.83. The course now consists of 9 compulsory subjects and 3 optional, requiring the purchase of only



9 text-books at a cost of \$4.06. The judgment of the best educators is strongly in favor of a limited course of study for elementary schools, and by a limited course of study I mean a course embracing a few subjects well taught. It does not follow that because geology or astronomy is not included in the curriculum that an advanced public school pupil should know nothing of these sciences, but what is meant is that a knowledge of these sciences such as a child may be capable of obtaining should be incidental to the ordinary course of the school, and not made the subject of special study by means of a text-book.

Within the range of our public school curriculum there is ample material with which to develop all the faculties which are supposed to be most active within the age limit of public school life. Imagination, and memory, and the reasoning powers and observation can all be quickened and stimulated to the utmost of any child's capacity as our curriculum now stands. If the true purpose of education be to develop power and concentration of thought, then as a necessary corollary the dissipation of energy leads to weakness. Better have a pupil an expert in the four simple rules of arithmetic than give him a smattering of all.

#### TEACHERS AND THEIR TRAINING.

The teaching staff of the Province of Ontario now numbers 8,480, the number of females employed being 5,710, and the number of males 2,770. In the last ten years female teachers have increased by about 2,000, and male teachers have increased by about 300. The effect which the employment of so many female teachers may have on the formation of national character and the development of those influences which give vigor and strength to national life is too large a question for present consideration. Having regard to the influences on the child of the personality of the teacher, one would naturally assume that the more vigorous and forceful methods of the male teacher would more thoroughly arouse the latent energies of the child and train him better for a life of self-reliance and self-assertion, but the time is too short during which the sway of the female teacher has been exercised to form a judgment on this point. It is apparent, however, to the most superficial observer of the changing phases of school life that in recent years the arbitrary discipline which asserted itself by physical force has given way to the humane and sympathetic discipline of affection and self-respect; that the schoolroom, so frequently the scene of angry denunciation and cruel torture to be avoided, shunned, and deserted whenever it was possible, is now resorted to with pleasurable anticipations, and is enjoyed for its happy associations as much as for the benefits which it produces. The great gulf which once separated the teacher from his pupils has been bridged over, and the feelings of dread and suppressed terror with which the child ever approached the teacher have been replaced by feelings of confidence and affection. This change, in itself a most important one, has been brought about largely by the influence of the female teacher.

The tendency toward the employment of female teachers, increasing as it is in Ontario, is still greater in other Provinces of the Dominion, as well as in the neighboring Republic. Only 66 per cent of the teachers of this Province belong to the female sex; in Quebec the percentage is 86; in New Brunswick, 79; in Massachusetts, 91; in New York, 83; in Connecticut, 88.

Notwithstanding the great increase in the number of teachers, the teaching force of the Province is still inadequate, and in this respect the position of Ontario is inferior to any of the other Provinces or the adjoining States of the Union, as will be seen from the following comparisons of the number of pupils allotted to each teacher:

In the Province of Ontario the average number of pupils allotted to each teacher is 57; in Quebec, 30; in Nova Scotia, 45; in New Brunswick, 41; in Maine, 18; in Iowa, 19; in Massachusetts, 36; in New York, 32.



## EXPENDITURE.

The Province of Ontario has been most generous in its contributions for all educational purposes, and particularly in the liberality with which it has maintained its public school system. I am not able to say that the salaries of teachers are as liberal as I would desire, and yet they compare favorably with the average salaries paid in the other Provinces and the adjoining States of the Union. Our schoolhouses may be said to be as comfortable and as commodious as schoolhouses are in any country. In the last ten years we have expended on sites and buildings for school purposes the large sum of \$5,371,661, and still the expense per pupil is certainly not excessive.

The average cost for elementary education in the United States, according to the last report of the Commissioner of Education, was \$17.22 per pupil; in the Province of Ontario it was \$8.40; in Illinois it was \$14.82; in Michigan, \$14.70; in New York, \$16.80, and in Massachusetts, \$22.60.

## PROGRESS OF SEPARATE SCHOOLS.

It is also gratifying to notice that the separate schools have kept pace generally with the public schools. In nearly all urban districts the accommodation for separate schools is ample and the equipment all that could be desired. The boards of trustees, with commendable liberality, have increased the teaching staff from 210 teachers in 1867 to 662 teachers in 1892, thus reducing the number of pupils per teacher from 91 to 56.

The increase in the number of separate school pupils in advanced subjects was most satisfactory. For instance, in 1867 the number studying geography was 8,866 and in 1892, 26,999; in grammar, 5,688 in 1867, and in 1892, 22,755; in arithmetic, 10,559 in 1867, and in 1892, 35,936; in British history, 1,418 in 1867, and in 1892, 6,713; in Canadian history, 2,571 in 1867, and 11,493 in 1892. There were 11,056 pupils taking physiology and temperance in 1892.

The standing of the teachers has also improved. Last year two were holders of first-class certificates, 93 of second-class certificates, 193 of third-class certificates, 15 old county boards, and 18 temporary certificates.

In 1889 only 190 separate school teachers held certificates granted by the department; in 1892, 288 held departmental certificates.

## TRAINING OF TEACHERS.

One of the most gratifying features, and the most hopeful as to the future results of our school system, is the fact that practically every school in Ontario is in the hands of a trained teacher. There is no phase of school work that occupies just now a greater portion of the attention of educators the world over than the professional training of the teachers of elementary schools. When Von Humboldt, early in the century, began the organization of the schools of Prussia, he laid down three proportions: (1) Education shall be compulsory; (2) education shall be liberally aided by the State; (3) every teacher must be trained.

The necessity for the training of teachers was also recognized in the reorganization of the elementary schools of Great Britain about fifty years ago. Horace Mann, who did so much for the schools of New England, and in fact for the schools of America, made the training of teachers the object of his special solicitude; and Dr. Ryerson, in inaugurating a school system for the Province of Ontario, as one of his first measures of reform secured the establishment of a normal school in Toronto. The large increase of normal schools in the United States and on the Continent is a sufficient indication of the importance attached to the training of teachers. Massachusetts, with a population but slightly in excess of Ontario, has 5 normal schools; New York has 11; Pennsylvania has 12; England and Wales have 44, and Prussia has 116. The time must come sooner or later when additional accommodation for normal school training must be provided in the Province of Ontario.

There are two features of professional training peculiar to Ontario which must be noticed: (1) The county model school system, and (2) the provincial school of pedagogy. In regard to both of these our position educationally is almost exceptional. I know of no other Province or State, except Germany, that has laid down the rule that no teacher shall enter upon the duties of his profession without special training. England has its army of pupil teachers, who may, in a certain sense, be said to be specially prepared before assuming their full professional duties; and, although there is much to say in favor of the English system, still, after a careful study of all its advantages, I prefer our own, and I believe that much of the prosperity of our schools during the last fifteen years is owing to the county model schools.

The provincial school of pedagogy deals with a department of professional training which everywhere, except in Germany, appears to be overlooked. Although the necessity for training elementary teachers is all but universally admitted, and generous provision made for such training in almost every civilized country, it was not considered necessary that the teachers of high schools should be required to study the science or art of teaching. About ten years ago provision was made for the special instruction of the higher schools of Germany, with encouraging results. In 1885 the first attempt was made in Ontario to provide similar instruction for the masters of our high schools, and three years ago the school of pedagogy, with a distinct faculty of its own, was properly organized. New York State, within the last three or four years, has established at Albany a normal school on a basis similar to the Ontario School of Pedagogy, for the purpose of training the masters of grammar and high schools.

I am aware that in certain quarters the school of pedagogy is not regarded with particular favor, but I have yet to meet an intelligent educator, either in this country or abroad, who does not consider its establishment as one of the most important steps which we have taken educationally in the last twenty years. When we reflect that nearly every teacher in our public schools passes through the high school; that every matriculant into our universities lays the foundation of future advancement in our high schools; that thousands of young men and women, from the farm and from the homes of our workingmen and our busy citizens, come under high school influences, it is not impossible to overestimate the effect which superior training of their masters must have upon their future lives. True, teaching power comes from study and experience, and no one who does not understand the processes by which knowledge is acquired and retained could discharge the duties of the teacher successfully. I hope before the session is over that the school of pedagogy will be more closely related to the Provincial University. By making it a purely post-graduate school we will maintain the high literary qualifications requisite for high school work; and by granting a degree in pedagogy, as I hope the university senate will agree to, we will have the imprimatur of the university, and in that way an additional guaranty as to its efficiency.

#### HIGH SCHOOLS.

The growth of the high schools is the only remarkable feature of our school system that now remains to be noticed. In 1867 we had but 103 high schools, with 159 teachers, attended by 5,696 pupils. The number of high schools in operation at the close of last year was 130, with 522 teachers, attended by 22,837 pupils. Thirty-three of the high schools have attained to the status of a collegiate institute. The number of pupils enrolled in the high schools represent a trifle over 1 per cent of the entire population of the Province; in the United States in the same class of schools the percentage is 0.58, and in Prussia, where great attention is paid to secondary education, the enrollment was 1.2. No less than 45 new high schools were erected in the last ten years, and substantial improvements have been made to 25. Nearly one-fourth, or 21 per cent, of the expenditure for teachers' salaries is now paid out of the pupils' fees. Ten years ago only 11 per cent of the teachers' salaries was paid in this way. In the course of study pursued by high schools there appears to be a



general preference for the study of modern language compared with the classics. For instance, only 5 per cent of the pupils now take a Greek course, as against 15 per cent taking the same course in 1867; only 40 per cent take Latin, as against 90 per cent taking Latin the same year; in 1867 38 per cent of the pupils studied French and none studied German; in 1892 the percentage of pupils studying French and German was 45 and 12 per cent, respectively. As evidence of the increased efficiency of the schools it may be stated that in 1867 56, or only 1 per cent of the pupils, matriculated into the university; in 1892 the number matriculated was 471, or about 2 per cent.

It is gratifying to notice that many young men and women attend the high schools for the purpose of acquiring a superior education for its own sake. Although high schools were primarily established for the purpose of preparing pupils for the learned professions, such is the appreciation of their course of study now that thousands flock to them for the mental training which they afford. The sons of workmen, of farmers, and of the mercantile classes, who have no other object than to fit themselves for the ordinary duties of their callings, have found the high school course an exceedingly profitable one. Since 1872 no fewer than 16,601 left the high school for mercantile life and 12,504 for agriculture.

Under our system of training teachers the high schools have within the last ten years been obliged to assume the nonprofessional course for the teachers of the Province, which was formerly done in the public and normal schools. The superior attainments of high school masters qualify them particularly well for the work of instruction in the nonprofessional subjects, and it is hard to overrate the advantages which young men and women enjoy in being brought into competition with each other at a leading high school to receive instruction from university graduates, many of them specialists in their departments. Were we to undertake as a Province the task of providing a system of training equally efficient by means of normal schools, the cost to the country would be greatly increased and without any substantial advantage by way of compensation; but from the organic connection which we have now established between all parts of our school system we are able to use at no additional cost to the Province our high schools for work which in the United States, in England, and in Germany is done in the normal schools at the expense of the State. The Province of Nova Scotia has recently followed our example and is now using the high schools and academies of the Province for the nonprofessional training of her teachers.

It will be observed from the estimates that we have made no increase for the last three years in the grant to high schools. I hope the house will see its way before many years to supplement the increased liberality of the taxpayer by an additional grant. In 1867, when we paid but a trifle over \$50,000 for high school purposes, the grant amounted to \$9.43 per pupil enrolled; last year, although the sum of \$100,000 was paid for high school purposes, it amounted to but \$4.38 per pupil, or less than one-half the amount per pupil paid twenty-five years ago. In the same period of time the expenditure for teachers' salaries has increased from \$94,820 to \$472,029, and the total expenditure for all high school purposes from \$124,181 to \$696,114. The liberality of the legislature, having regard to the number of pupils enrolled, is not nearly as great as it was twenty-five years ago. If our high schools are to continue to be accessible to all classes of the people, they should not be barred by excessive fees. The Farmers' Institute a few weeks ago adopted a resolution to the effect that "any interference with our high school system which would remove it beyond the reach of the poor and make higher education the exclusive property of the rich is not in the public interest."

#### DEPARTMENTAL EXAMINATIONS.

The house will observe that I am asking for the sum of \$16,000 for departmental examinations. This is a slight increase on last year, but will be recouped by the fees of candidates. The education department considers it but reasonable, if the



country provides what is almost free education for the pupils attending public and high schools, that those who want a test applied to their attainments by which they can enter on an educational career for the purpose of their own maintenance should themselves bear the cost of this test. Formerly a great part of the sum now paid by the candidates was paid by county councils, and, as somebody must bear the expense of the examination, it is thought that those specially interested are not the persons entitled to relief.

It might be interesting to the house to know that the system of conducting examinations by a joint board of the department and of the university has worked well. By means of this board we are able to obtain examiners of the very highest standing, and, as a consequence, the value of the certificate which they recommend is greatly enhanced. For admission to the examinations of the medical council it is the only standard now accepted. For university purposes it is also accepted *pro tanto*, and, inasmuch as candidates can prepare in the same class either for matriculation into the university, law, medicine, or a teachers' certificate, the classification of the high schools is, as a matter of course, very much simplified. The generous acceptance of this standard by the different universities of the Province has contributed very largely to the success of the scheme.

Another feature of this scheme which should not pass unnoticed is that it makes teachers to a great extent the guardians of their own profession. This is the case in law, in medicine, and in arts. In 1883 the departmental examinations were conducted by men engaged in other callings, some of them young and inexperienced, others too much absorbed in their own professional work to sympathize fully with other professions. The year before I entered upon my duties the examination papers of candidates for teachers' certificates were read by law students, medical students, lawyers in active practice, clergymen, and others with little or no professional experience. Last year, and for several years back, these papers were read only by graduates of our universities actually engaged in teaching.

#### TECHNICAL EDUCATION.

The growth of mechanics' institutes and free libraries in the last ten years is worthy of notice, the increase being from 93 in 1883 to 255 in 1893. The number of volumes issued in 1883 was 251,920, and in 1893, 1,415,867, an increase of nearly 600 per cent. I am asking for an additional grant this year for mechanics' institutes, mainly that their advantages might be extended to the residents of small towns and outlying villages, and I do so with the greatest pleasure because I observe that the tendency toward the perusal of a higher class of literature is in the ascendant. For instance, in 1886 60 per cent of the volumes circulating by means of our mechanics' institutes and free libraries was fiction; last year (1893) only 43 per cent of the volumes issued was fiction. I attribute this change very largely to the improved taste for substantial reading which we have been able to cultivate through the literature course in our high schools and collegiate institutes. The demand for the best literature of the language, either in history, in poetry, in biography, or in the magazines, is constantly growing, and I know of no better way by which a young man can continue his education after he leaves the public school, or even the high school, than by becoming a subscriber to a mechanics' institute or a free library.

#### SCHOOL OF PRACTICAL SCIENCE.

The school of practical science has grown out of the school of technology established in 1871. Up till 1886 the work of the school was limited to the study of civil and mechanical engineering with such instruction in practical and analytical chemistry as was necessary. Owing to the strong demands for more adequate provision for mechanics, engineers, architects, and miners, the accommodation in the school of science was greatly increased and such equipment provided as would facilitate the practical study of a complete course in practical science and technology.

In company with Professor Galbraith I visited, in 1886, some of the largest schools in the United States, such as the school of science in connection with Lehigh University, Cornell University, Columbia University, the School of Technology at Boston, and other schools. The basis of the South Kensington School in London was also considered and the faculties in the school of science were, as a consequence, greatly enlarged. The new buildings projected in 1886 were completed in 1890 and formally opened in 1891. The total cost of the building and equipment, including the old building now used for chemistry and mineralogy, was \$220,000.

It is most satisfactory to know that the provisions made for technical education will now compare favorably with the best institutions on the Continent. No where in Canada, at all events, unless it be at McGill University, is there such ample provision for the education of engineers, architects, and mechanics, and in no school in the United States, unless it be the Boston School of Technology, is there a school superior to that now established in Toronto.

The course of study includes mechanical, electrical, and mining engineering, with full courses in architecture and analytical and applied chemistry. By the appointment of Professor Coleman the department of mineralogy, metallurgy, and assaying has been greatly strengthened, and although not as yet as complete as I would desire, nevertheless the work done must ultimately prove of the greatest value in the development of the mineral resources of the country.

That this addition to the educational facilities of the country has been appreciated is evident from the increased attendance of students. In 1882 the number of students in attendance was 18; in 1893 the attendance was 143, a very gratifying increase in such a short period. Twenty-six counties of the Province and two districts and two Provinces of the Dominion are represented in the school and contribute among them 89 students; 4 are from the United States and the remainder from the city of Toronto.

Apart from the advantages which must accrue to the country from the training of skilled workmen in the departments of engineering and architecture, the diversity of employment afforded by the school of science must prove of substantial advantage to the young men of Ontario. While it may be impossible by any action of the legislature to restrain the strong disposition which appears to prevail everywhere to enter the learned professions, it is without question an advantage to diversify the occupation of the people as much as possible. Skilled architects and engineers are in constant demand. The vast railway enterprises of the Dominion are calling for skilled mechanics. The development of electricity opens a new field for the genius of our people. The mineral resources of the country are waiting the Midas hand of the assayer. The growth of our large cities and the vast expenditures on water-works and sewage systems call for the well trained hydraulic and sanitary engineer. That the skilled labor required for these purposes can now be supplied within our own Province and by the judicious expenditure of the money appropriated by this legislature is a feature of the educational system of this country which should not be overlooked. I have great confidence, therefore, in asking the legislature to continue its liberality to the school of science. Its record shows that it is worthy of confidence, and the attendance from all parts of the Province shows the extent to which the instruction which it affords is appreciated.

#### GENERAL SUMMARY.

Since 1867 the sum of \$12,372,922 was spent by the education department for all educational purposes. Of this sum \$6,229,410 went to public and separate schools, and \$2,092,570 went to high schools; the remainder was spent on the training of teachers, technical education, and the maintenance of superannuated teachers. The average amount paid for all educational purposes during the administration of Mr. Sandfield Macdonald was \$295,962. The average amount paid during the last twenty-two years was \$510,403, or an increase of 73 per cent. The last year of Sandfield



Macdonald's government the whole grant to education amounted to \$351,306; in 1893 the total sum expended for all educational purposes, leaving out civil government, was \$662,520.

The yearly average grant to public and separate schools during the Sandfield Macdonald administration was \$167,540; during the last twenty-two years the yearly average was \$258,394, or an increase of over 50 per cent.

The grant to poor schools rose from \$5,590 in 1871 to \$31,497 in 1893, to be further increased to \$45,000 during the current year.

The grant for mechanics' institutes, libraries, and technical education rose from \$4,257 to \$69,630 in 1892.

During Mr. Sandfield Macdonald's time the cost of administering the education department was 5 per cent of the average expenditure; during the last twenty-two years the cost of administration was only 3 per cent. During the last year of Dr. Ryerson's administration the cost of administering the education department was \$19,315; the year before I took charge of the department the cost was \$20,309; the cost in 1893 was \$19,890.

Since 1871 the number of public schools established has increased from 4,770 to 5,903, the number of teachers from 5,476 to 8,480, and the number of pupils enrolled from 454,662 to 485,670; the number of teachers trained in normal schools from 828 to 3,038. Our high schools have increased during the same period from 104 to 128, the teachers from 239 to 522, and the pupils from 7,968 to 22,837. In 1871 we had but 1 normal school; now we have 2. In 1871 we had no county model schools; now we have 59. In 1871 we had no school of pedagogy; now we have 1. In 1871 we had no art schools for mechanics; now we have 8, besides the school of science. In 1871 we had no properly organized teachers' institutes; now we have 69, attended annually by 8,142 teachers. In 1871 we had only 51 mechanics' institutes; now we have 244, with 145 reading rooms.

On every hand there has been growth and development. The liberality of the government has been exceeded over and over again by the liberality of the ratepayer. During the last twenty-two years about three generations of school children have passed from the activities of the schoolroom to the responsibilities of citizenship. May we assume that in the energy of our people, the stability of their character, and the general moral tone of the community there is reflected some of those qualities which it has been the purpose of the public and the high school to inculcate.

#### WORLD'S FAIR.

I can not close my observations without congratulating the house and the Province on the distinguished position won for the school system of Ontario at the World's Columbian Exhibition. To place a young Province like Ontario in competition with the States of the American Republic and with the monarchies of Europe was a somewhat severe test. It was no small honor, therefore, in the face of such competition, to obtain an award for our exhibit as a whole, and particularly to obtain an award for our school system as a national system, completely organized from the kindergarten to the university. I am informed that this was the only award of the kind that was given. If so, it adds very much to its importance. Besides this award, which includes almost all others, we were awarded honors for our system of conducting the professional training of teachers, for our public and high school system, and for the excellence of our text-books and the system under which they were authorized. For the honors of this distinction no single person can establish an undivided claim. A school system, either in its main features or in its details, is not the work of a day.

The governments which preceded this government, both in Ontario and in the old Parliament of Canada, the ministers and chief superintendents who were my predecessors, the inspectors of public and high schools, and the others officers of the department, the director of the exhibit and the commissioner appointed by the gov-



ernment, as well as the people of Ontario whose liberality made our school system—all possibly have a right to share in this distinction. An honor so worthily obtained will, I hope, be carefully guarded. The man who would imperil our school system by partisan criticism should meet with undisguised opposition; the secretary who would introduce any element of disintegration, either into the organization of the system itself or into the public sentiment by which it is supported, should be treated as an open and avowed enemy, and he who by paper or by speech attempts rather to discredit than to improve the work already done should be regarded as an incendiary applying a flaming torch to one of the historic cathedrals of the mother country.

## II.—EDUCATION IN NEW ZEALAND.

The report of the Commissioner of Education for 1890-91 contained a paper on "Secondary education in New Zealand,"<sup>1</sup> prepared by Hon. Sir Robert Stout, K. C. M. G., formerly minister of education and premier of the colony. He introduced his subject by a brief outline of the system of public instruction and closed with an account of the universities, especially as related to the secondary schools. For the following statement, showing more fully the organization and present work of the universities and also comprising particulars relative to technical instruction in the colony, the office is indebted to Mr. Mark Cohen, editor of the Dunedin Evening Star:

The annual meeting of the senate of the New Zealand University was held at Auckland this year under the presidency of the chancellor (Sir James Hector). It must be borne in mind that our university does not teach; it merely examines. The teaching is done by the affiliated colleges, which are entirely independent of the university. There are three of these colleges—one at Dunedin, another at Christchurch, the third at Auckland, and Parliament is now being petitioned to make the necessary provision for the establishment of the fourth at Auckland. The senate is a peripatetic body, meeting annually in one of the chief cities, its principal work consisting of appointing examiners, arranging for the conduct of examinations, prescribing the work, and conferring scholarships and degrees according to the reports of the examiners, who are resident in England for the most part.

The revenue of the university is close on \$20,000, of which \$15,000 is provided by Parliament, and \$6,750 are expended on scholarships and a little over \$10,000 in examiners' fees. Last year 903 candidates presented themselves for examination in all branches—matriculation, medicine, law, arts, science, scholarships, and honors—compared with 782 in 1891, and the percentage of passes was eminently satisfactory. Among the degrees conferred was that of doctor of science on Mr. Charles Chilton, rector of the high school at Pat Chalmers, near Dunedin—the first degree of its class gained in any of the Australian colonies. The principal matter discussed by the senate was a proposal by Auckland College to discontinue the appointment of examiners in England, and to change the existing system of college work under which the academic year is divided into two terms. They suggested that the year's work should be spread over nine months and be divided into three terms; and that, in order to get rid of the delay and lessen the expense, the English examiners should be dispensed with and examiners be appointed either in the colony or in Australia.

<sup>1</sup>Vol. I, Chap. II, pp. 45-94. Note corrections in the list of Fellows of the New Zealand University, p. 94: Read Cook for Coop; after Sir James Hector, K. C. M. G. F. R. S. instead of abbreviations printed; in blank after W. D., Milne; for Rohlerton, Rolleston; for I. S. Sale, M. A., G. S. Sale, M. A., and for Hon. Sir Robert Lunt, R. C. M. G., Hon. Sir Robert Stout, K. C. M. G.

But it was clearly shown that the entire fabric on which the memorialists had constructed their petition was based on false conclusions. It was proved that the time given to tuition in our colleges was equal to that of any university in the world, and that as much time was given to lectures as in either Australia or England, and that the proposed change would not tend to economy. The senate were unanimous in approving of the English examiners and indorsed Chancellor Hector's view that the university derived immense advantage from securing in that capacity the services of some of the most eminent literary and scientific men in Great Britain.

The report of the University of New Zealand just issued contains a few items of interest. In the first calendar, published in 1873, there were entered 17 matriculated students, all men. In 1875 one female matriculated student was chronicled among 50 men. During 1891-92 there were attending lectures at the colleges at Dunedin, Christchurch, and Auckland 705 students—of this number there were in all 378 female students—118 matriculated female students, as against 261 males; 160 unmatriculated females as against 166 males. There is no British university—probably no university anywhere—that can show such a large proportion of women students. Between 1886 and 1892 93 junior scholarships were granted by the university, and of these 40 were gained by girls. During the same period 188 students have received the B. A. degree, and of these 46 were females. The M. A. degree is now held by 128 New Zealand graduates; and of these 34 are women. But of the 100 senior scholarships granted after three years' college work, when the candidate is completing the B. A. examination, only 16 fell to women between 1876 and 1892, and of the 58 graduates who gained the M. A. degree with first-class honors during the same period only 10 were women.

On April 8 Otago University celebrated its majority with a speech day. There was a goodly gathering of the alumni and friends of the institution, and the venerable chancellor (the Rev. Dr. Stuart) presided. The most interesting address delivered on the occasion was that by Dr. Shand, professor of mathematics, who sketched the work done by this university during the past twenty-one years. It was opened in July, 1871, on premises (now used as a bank) in the very center of the business part of Dunedin with a staff of professors—classics and English (Sale), mathematics and natural philosophy (Shand), and mental and moral science (Maegregor, now inspector-general of hospitals for the colony).

In 1872 a chair of chemistry and mineralogy (Black) was established; in 1873 the faculty of law, with Mr. (now Sir Robert) Stout as the first lecturer; in 1875 the medical school was founded, with Professor Coughtrey as the first demonstrator of anatomy and professor of physiology, to be succeeded in 1877 by Dr. Scott, the present dean of the faculty of medicine; in 1877 Captain Hutton was appointed professor of natural science, to be succeeded in 1880 by its present incumbent, Prof. Jeffrey Parker; in 1878 a school of mines was established, with Professor Ulrich at its head, and in 1891 the latter was given the assistance of Mr. D. Wilkinson, from the School of Mines, London, as lecturer on metallurgy.

The Presbyterian Synod of Otago has indorsed three chairs—mental and moral philosophy (Dr. Salmond), English language and literature (Professor Gilroy), and natural philosophy (Dr. Shand). Thus the staff in the faculty of arts increased from 3 professors in 1871 to 7 professors and 2 lecturers in 1893, while the whole teaching staff of the university had increased from 3 in 1871 to 26 professors and lecturers in 1893, exclusive of the honorary medical staff of the Dunedin Hospital who are *ex officio* the university's lecturers on clinical medicine and surgery. When the university opened its doors it had 81 students, none of whom had to pass a matriculation examination. In 1872 only 7 candidates passed that examination and the attendance consequently fell to 70, and in 1874 it dropped to 50, its lowest point, due to the entrance examination and the natural process of weeding out incompetent students. The number has gradually risen since, till in 1892 the attendance was 212, the classes taken were 568, and the matriculated students 173, or 83 per cent. As to the results of the teaching:



For the quinquennial period ending in 1877 only 5 degrees were obtained and 1 student took honors; in the period ending 1882, 19 degrees were taken and 3 students took honors; in the period ending 1887, 56 degrees were obtained, 12 students taking honors; and in the last period ending in 1892, and including the latest examinations, 143 degrees were obtained and 44 students took honors. Of the whole number of 23 degrees that were obtained 189 were in arts and science, 9 in law, and 25 in medicine. To quote Dr. Shand: "I venture to suggest that these figures indicate a satisfactory rate of progress, and the progress is due in part to the expansion of the institution, in part to the marked elevation of school education in this district, and in part to the improved tone existing among the students.

Technical instruction is making headway in the colony, thanks to the enthusiasm of a number of gentlemen in the trading and manufacturing centers. After a great deal of agitation the legislature has, during two sessions, voted \$4,000 per annum toward the encouragement of technical education, the vote being distributed in the proportion of £1 to every £1 locally raised by subscription. But it is felt that this is placing the so-called technical schools on an insecure footing; that it is too much like a hand-to-mouth existence, and the present minister of education intends asking Parliament to pass a bill which will give a per capita allowance to every student who passes examination by a Government inspector in certain specified technical subjects.

At Dunedin, the technical institute, which owes its origin mainly to the enthusiasm of Superintendent Thomson, who is one of the science teachers at the boys' high school in that city, has been in existence exactly three years, and has so far done good work, several of its students having been enabled to proceed thence to the matriculation examination of the New Zealand University, and, passing it, have entered on the arts and mechanical courses of the Otago University, which is one of the teaching colleges of that institution. This year's report of the committee of management (mailed herewith) is one of encouraging progress. Of the 364 students who enrolled themselves nearly 60 per cent were lads and girls who, having passed the "compulsory standards" of the primary schools, availed themselves of this opportunity of self-improvement in some branch of study that is likely to be of service to them in the business on which they are now engaged.

Owing to the want of suitable premises the committee have not been able till the present year to take up the truly technical side of their work, but that difficulty has now been overcome, and this term the curriculum includes instruction in plumbing, carpentry, wood and metal turning, wood carving, and typewriting. The management of the school is intrusted to a number of educationists, who are annually selected by the subscribers. At Auckland a similar institution has just been established under the more ambitious title of the Workingmen's College, which will be managed by a council, partly chosen by subscribers, and partly elected by the city council, the governing body of Auckland College, the governing body of the Auckland Grammar School, the education board of the Province, the Employers' Association, and the Trades and Labor Council. Its session will be considerably longer than that at Dunedin, viz: from February to November, while the Dunedin institution usually opens its doors in April and has difficulty in keeping its students together after October.

The Auckland institution proposes to be affiliated with the South Kensington Art Department, and its curriculum embraces freehand drawing; practical, plane, and solid geometry; mechanical drawing and machine construction; coach building; architectural drawing and building construction; chemistry; dressmaking, domestic economy, arithmetic, algebra, mathematics, English and English literature; French, and bookkeeping. In Wellington a commencement has been made under the directorship of Mr. A. D. Riley, the drawing teacher under the Wellington education board, who may be considered a technical expert, and at Invercayell and Christchurch organizations will shortly be in existence for giving instructions on similar lines



to those followed in Dunedin and Auckland. There is therefore reasonable grounds for anticipating that Parliament will soon be invited to increase the grant in aid of technical education.

Mr. Cohen adds the following particulars, derived from the report of the minister of education (Hon. W. P. Reeves) for 1892-93:

For the first time since the inauguration of our educational system in 1877, the average attendance during the last quarter of 1892 numbered for all the schools in the colony upward of 100,000 children, exceeding the record for 1891 by 4,653. It is noteworthy in this connection that, for each of the fifteen years during which the education act has been in operation, each succeeding year, in respect to average attendance both for the fourth quarter and the entire year, has gained steadily on the preceding year. The ratio of average attendance to the mean roll for the year was 80.6 per cent, which is the highest yet recorded. There was very little change in the relative proportions of the ages in the public schools. There is a slight increase in the proportion of children who remain at school after passing their thirteenth year, the percentage now standing at 14; but, our factories act notwithstanding, the great bulk of our children leave the schools immediately after the compulsory standard has been passed, and either assist the household or enter on the battle of life.

In 1878, when the act came into operation, the average attendance only numbered 45,521. The number of pupils has doubled itself in the intervening fifteen years, due primarily to the natural increase of population, and due in no small degree to the acceptance of the system by the colonists and to the steadfast policy of each administration, which has taken care that a school shall be planted alongside of every knot of fresh settlers. The total cost of our public school system in 1892-93 was £479,114; in 1877 it was £308,000.

### III.—EDUCATION IN INDIA.

*India* (British provinces and native States): Area, 1,560,160; population, 287,223,-431 (1891).

On the 3d of February, 1882, the Government of India appointed an education commission, with a view to inquiring into the working of the existing system of public instruction and to the further extension of that system on a popular basis. The system has been developed in accordance with the policy outlined in the dispatches of 1854 and 1859, the former being the date at which the education of the whole people of India was definitely accepted as a state duty.

As set forth in the dispatch of 1854, the state undertook (1) to give pecuniary assistance on the grant-in-aid system to efficient schools and colleges; (2) to direct their efforts and afford them counsel and advice; (3) to encourage and reward the desire for learning in various ways, but chiefly by the establishment of universities; (4) to take measures for providing a due supply of teachers and for making the profession of teaching honorable and respected.

The second great dispatch on education, that of 1859, reiterated and confirmed the provisions of the earlier dispatch, with the single exception of the course to be adopted for promoting elementary education. It was noted that the native community failed to cooperate with the Government in promoting vernacular education, and strong doubts were

expressed as to the suitability of the grant in aid system, as hitherto in force, for the supply of vernacular education to the masses of the population. Such vernacular instruction should, it was suggested, be provided by the direct instrumentality of the officers of the Government, on the basis of some one of the plans already in operation for the improvement of indigenous schools or by any modification of those plans which might suit the circumstances of different provinces.

The expediency of imposing a special rate on the land for the provision of elementary education was also commended to the careful consideration of the Government. In short, these instructions confirmed the principle of incorporating and improving the existing indigenous schools, rather than of inducing the people to set up new schools under the grant in aid systems then in force; but they also sanctioned the establishment of new schools by direct departmental agency. Accordingly, the local governments considered themselves free to adopt whichever system seemed to be best suited to local circumstances.

In the instructions to the commission created in 1882 attention is called to the fact that, although the development of elementary education was one of the main objects contemplated by the dispatch of 1854, owing to a variety of circumstances more progress up to the present time has been made in high and middle than in primary education. While there was no disposition on the part of the Government to check or hinder such progress, it was submitted that the means by which elementary education may be extended and improved should be their principle care.

In the investigation, which lasted from the 10th of February, 1882, to the 16th of March, 1883, the commission embraced every grade of instruction and all classes of schools as well as the particulars of administration, finance, and legislation.

A summary of the report of the commission was presented in the Annual Report of the Commissioner of Education for 1883-84.<sup>1</sup> The Government of India has since published two quinquennial reviews of the progress of public instruction in all its branches. The substance of these later reports was brought into very concise form in a paper presented before the Bristol Royal Statistical Society, by J. A. Baines, esq., C. S. I. The portion of this paper dealing directly with the statistics of education is here reproduced. As introductory, it should be said that Mr. Baines discussed the subject from the standpoint of an intimate personal knowledge of all the conditions involved. Of himself he says:

In the part of India where I have been chiefly employed in administrative work it is the rule for what are known as the district officers—a comprehensive term which I fear I can not spare space to explain here—to inspect all the primary schools that lie within their range during the annual tour in the rural tracts. The inspection is directed not so much to the proficiency of the pupils in their studies, which is tested

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<sup>1</sup>Pages CCXXXVIII-CCXLVI.

by the departmental officers, as to the general condition of the institution in regard to such matters as attendance, punctuality in registration, and writing up current records, provision of furniture, cleanliness of the school premises, and similar non-professional essentials. It is the custom, however, on such occasions to gratify the master and the local board of management or the parents of the pupils by a cursory parade of the different classes in the school, and to note down one's general impression or any special merits or defects that may have attracted attention. This, then, is the extent to which probably nearly every member of my profession is competent to judge of matters educational, and it obviously covers but one section, though that is the largest and most important of the population under instruction. It is that in which the masses, among whom the bulk of our work lies, are chiefly interested, and it is that again which, under the system in force in several of the Provinces, seems as a feeder to the institutions of a higher grade, and where accordingly one finds in embryo the pupil who is met later in life in the court or offices of the district, or in even higher functions.

I personally have had the further advantage of having been for a few months an educational inspector, and though my experiences in that capacity gave me no right to speak as an authority, they were sufficient to give me a certain insight into the system and to enable me to read between the lines of the statistics, selections from which I have to present to you hereafter.

It should be premised also that the interest of the portion of the paper here reproduced is greatly enhanced in the original by the author's analysis of the social and industrial conditions of the country. Interesting and valuable as this portion of the paper is, the limits of space forbid its full presentation. A single paragraph, in which the writer has summed up the conditions that exercise a paramount influence upon education in India and differentiate this from other countries, is here quoted:

I have hitherto spoken of the population as consisting of only two sections; one preponderately numerous, the other very much the reverse. I have divided the community into, first, a large body of agriculturists with a small contingent of handicraftsmen working on a small scale, and, secondly, into an enormous aggregate of independent village communities with a minute sprinkling of towns of above the size of a local market. But the next social units with which it is necessary to my subject that I should deal are of a very different character. They refer not so much to the occupation and functions of the people or to what may be called, on a small scale, their political congregation, but to what, from an educational point of view, is much more important; that is, their religious, their ceremonial, and, above all, their domestic relations. I speak of what are known to us by the Portuguese name of castes. I can only touch here upon the barest outlines of this complicated subject, and will just bring forward enough of its main features to explain its great, indeed we may almost say without exaggeration, its overwhelming influence upon the education of the majority of the Indian population.

The caste system, indeed, nominally prevails, strictly speaking, among the Brahmanic community alone; that is, among those who accept Brahmanic ministrations and recognize the religious and social preeminence of the Brahman. But in practice there are few sections of the community that are free from it. The bulk of the Mussulmans in India are local converts from the Brahmanic fold and have preserved to a great extent their former unregenerate social observances and traditions. The Jains and Sikhs are simply schismatics. The forest tribes occupy the border land between Brahmanism and the organized and animistic creeds of their ancestors. Those who remain in the woods are staunch to their ancient faith, and have their own priests and ceremonials. The fringe that lives adjacent to the plains is gradually being absorbed into Brahmanism by means of caste inducements, not by anything



in the nature of proselytism or conversion, so that we may roughly say that, except among the frontier tribes of the northwest, where Islam is strong and tribal feeling stronger, and among the Buddhists of Burmah, a portion of the Christian converts and the small communities of the hill tracts, there is a general adherence to the caste system. Even foreign tribes, such as the Parsis and Beni-Israel, or Marathi-speaking Jews, have acquired a considerable dash of the prevailing sentiment regarding this matter.

Mr. Barnes introduces the strictly educational part of the paper with the following table, compiled from the census returns modified by the returns of the education departments. They relate to the British provinces, comprising a population of 221,172,952 (census 1891), and the native States, whose schools come under the department of public instruction of the adjacent local governments, as in Bombay and the central provinces:

	British provinces and smaller cities.	
	Males.	Females.
Pupils .....	3,517,778	168,274
Literate (but not pupils) .....	9,471,663	461,955
Illiterate .....	104,504,573	112,776,440
Total .....	117,494,014	113,406,669

Proportionately stated, the figures tell the following tale:

	Males.	Females.
	<i>Per cent.</i>	<i>Per cent.</i>
Under instruction .....	2.99	0.22
Not under instruction, but able to read and write .....	8.06	0.34
Illiterate .....	88.95	99.44
Total .....	100.00	100.00

The paper continues:

This, then, was the prevalence of instruction in the year 1891. Of the males, 11 per cent, of the females of India 56 per 10,000 were then stated to be not illiterate, or 6 per cent of the whole community. There are three other aspects in which the return may be considered. First, it is allowable to deduct the children of both sexes under 5 years old, that is below school-going age, a process which raises the proportions to the extent shown below:

	Males.	Females.
	<i>Per cent.</i>	<i>Per cent.</i>
Pupils .....	3.49	0.17
Literate .....	9.39	0.48
Illiterate .....	87.12	99.35

I should have liked to have dealt with the population of school-going age as a whole, but as a further return will show, when I treat of it presently, it is not practicable to thus distribute the pupils, since, though the masses may cease to attend school at 14, many leave long before this, while of the minority a good many continue at school up to 19 or 20, and at college still longer. Roughly speaking, the proportion has been departmentally taken at 15 per cent of the total male popula-

tion. In the case of girls it would not reach much above half that fraction, since it is rare to find them allowed to attend school after they have attained their marriageable age of between 10 and 14, and the proportion under 5 is considerably above that of the boys. The next light in which to consider the distribution is territorially or by provinces, a point which can be dealt with summarily by reference to the following statement, which shows the proportion of illiterate of both sexes in the principal divisions of the country:

	Illiterate per 1,000.			Illiterate per 1,000.	
	Males.	Females.		Males.	Females.
PROVINCES.			PROVINCES—continued.		
Madras.....	851	990	Lower Burmah.....	557	902
Bombay.....	860	990	Upper Burmah.....	538	985
Bengal.....	892	996			
Northwest provinces.....	937	997	STATES.		
Oudh.....	942	998	Haidrabad.....	923	997
Sindh.....	915	995	Baroda.....	856	995
Panjab.....	926	997	Mysore.....	895	993
Central provinces.....	941	998			
Assam.....	924	997			

As regards males, the difference between Burmah and the rest of the British Possessions must be noted, as it is due to the religious system in the more remote province. Buddhism there demands that every boy should spend a certain number of years under instruction in a monastery, and the establishment of these institutions being an act of religious merit, leading to substantial benefit in the next incarnation of the pious founder, is a usual way of disposing of wealth, the accumulation of which is reprobated in the tenets of the local faith. Not a large proportion, it may be mentioned, of these Hpongyi Kyaungs, as they are called, are included in the departmental returns, though a good many of the private institutions are gradually adopting the modern text-books and methods of teaching mathematics and writing introduced of late years along with the British system. But when we come to the rest of India, instead of but little over half the male population being illiterate, we find the lowest proportion to be 85 per cent, and throughout a considerable portion of the country it rises above 93. All that need be remarked about the other sex is that, except in Burmah, the illiterate nowhere form less than 99 per cent of the total number.

We have, then, the distribution according to the main religious creeds. Here, again, no detailed comment is necessary, since nearly three-fourths of the community are returned under titles which include such wide divergences in their subdivisions as to be valueless as aggregates. We must take, for instance, the Brahmanic community by castes, and if we divide the Christians, similarly, into native converts and foreign sojourners, the results are very different from those given in the following table:

Creed.	Percentage of illiterate.	
	Males.	Females.
Brahmanic.....	89.5	99.6
Sikh.....	90.4	99.6
Jain.....	46.6	98.6
Buddhist.....	52.6	97.4
Parsi.....	22.3	49.9
Mussulman.....	92.9	92.7
Christian.....	65.7	86.4
Jew.....	48.1	78.6
Forest tribes.....	99.2	100.0

The only remarks on the figures, then, that need be made are that next to the European element, the Parsi is the least illiterate, and represents the only indigenous section which has an appreciable proportion of literate women in it, and the whole

Zoroastrian community numbers less than 90,000 souls. The Jains, which come next, show remarkable divergence between the figures for the two sexes. This is due to the fact that the males included in the area where education was returned at the last census are nearly all traders, while their households have no such characteristic to raise them above the general dead level of their sex. The Jews, again, form a small and scattered community of less than 18,000. The Sikhs are cultivating landholders of military proclivities, neither of which pursuits is favorable to the diffusion of book learning. They are probably, however, a little more literate than the table shows them to be, because many know their scriptural alphabet and literature, without being able to read the Persian character, which is that taught in the public schools of the Punjab. The Buddhists, as I have just said, are concentrated in Burmah and the Himalaya, and can generally read and write.

But there is another point in connection with the permeation of literature through the community at large on which the census alone throws any definite light. This is the component parts of the class shown above as not illiterate. The information collected relates only to those returning themselves as no longer under instruction, but no doubt many of the pupils of the higher institutions are here included, and even irrespective of these the return sufficiently fulfills its object of indicating the social classes that take advantage of the instruction placed within their reach. The tables treating on this subject are based on individual castes, numbering, of course, many thousands, all of which were classified into conventional groups, based partly on racial, but mainly on occupational or functional considerations; not necessarily the occupation, it must be understood, exercised in the present day, but that traditional in the caste and from which it derives its name.

The object of this combination, I need perhaps hardly observe to my statistical colleagues here, was not to serve any anthropological purpose, but merely to ensure uniformity of treatment in the twenty or so units of compilation over which the 287,000,000 people were distributed, so that the central authority might be confident that in analyzing the aggregate of the returns he was dealing with material identical, or nearly identical, in all cases. Now, as there are no less than 60 of these caste groups, I do not propose to do more than skim the surface of the very suggestive results of the above analysis. The first glance shows us two facts: One encouraging from the standpoint of comparison with the past, the other rather startling as to the situation at present. We find, on the one hand, that among these 60 social groups there is not one which is entirely barren of people who know how to read and write. Of course, if we take individual castes, in different parts of India, there must be hundreds in the latter condition, but looking at society in what we may describe as strata, to use a geological term, it is remarkable that the lowest sections have managed to obtain a crumb or so of instruction, and it is quite certain that this was not the case half a century ago. Even now the share of the majority of the groups is insignificant, save in connection with this last consideration, but the encouraging fact is that it is there at all. This brings me to the second and less satisfactory aspect of the table. We find that the proportion of one-tenth of the group is literate in no more than 11 instances out of the 60, and that these 11, containing 52 per cent of the total number of literates of the country, represent less than 14 per cent of the population. Even from this selection we must make certain deductions, as in the 52 per cent are included nearly 14 per cent of Burmese, Europeans, and Eurasians. We then get the results shown below, that over 86 per cent of the people share among them something under 48 per cent of those who can read and write, scattered over some 50 functional groups.

The great agricultural and pastoral group, for instance, shows  $2\frac{1}{2}$  per cent of literate among its component parts. The artisans fall slightly below this, and no item of either group is included in the inner circle of the 10 per cent. These figures show the comparative concentration of instruction within the classes to whom it is the



traditional and direct means of livelihood, and its comparative neglect where it can only be of value as a factor in general education. But this is a matter on which my remarks must be deferred till we have done with the statistics of the subject.

	Percentage on total.	
	Population.	Literates.
Brahmans .....	4.50	16.81
Writers .....	.94	4.74
Traders .....	4.11	13.74
Native Christians .....	.72	2.05
Parsis .....	.04	.42
Others .....	.22	.69
Foreigners and Burmese .....	2.88	13.86
Balance .....	86.19	47.69

I therefore pass on to the last statistics which I propose to introduce. They relate to the quality of the instruction, even as those already passed in review show its diffusion, and are taken therefore from the departmental returns of public schools by which are meant those conforming to the prescribed standards. There are, no doubt, over 39,000 institutions shown as private on the rolls, but most of them are merely denominational or rudimentary schools, with from 10 to 13 pupils apiece, and of a very fluctuating standard of learning and precarious existence. The following table contains the information in question:

Grade.	Numbers.		Distribution, per cent.	
	Boys.	Girls.	Boys.	Girls.
College:				
Arts .....	12,940	45	0.44	0.01
Professional .....	3,261	31	.10	.01
Normal institution .....	4,327	819	.14	.27
Technical institution .....	16,125	461	.53	.15
High .....	57,462	926	1.89	.30
Middle .....	125,014	6,105	4.11	1.98
Primary:				
Upper .....	343,734	19,920	11.30	6.47
Lower <i>a</i> .....	1,819,849	178,477	59.83	58.08
Lower <i>b</i> .....	658,758	100,616	21.66	32.73
Total .....	3,041,510	307,400	100.00	100.00

*a* Reading printed books.

*b* Not reading printed books.

It shows that 93 per cent of the boys and 96 of the girls are in the primary stage of instruction, and that over a fifth of the former and nearly a third of the latter are not yet advanced to the stage of reading printed books; 4 boys and 2 girls in every 100 at school at all had reached the middle grade, and two more boys had got as far as the higher. When we have to consider the university and other institutions, we must abandon percentage and take to the fractions of 1,000 to get an appreciable proportion, either for boys or girls. This brief exposition is enough to show that anything beyond elementary instruction has as yet made little way in India, and I fear that when we come to the tests applied to the work of the schools the real value of the figures will shrink into still smaller proportions. Generally speaking, the scheme includes a test of primary instruction at the end of the third or fifth year of attendance. The middle-class stage is closed by an appropriate examination, to which is added a special test for entrance to the lower clerical grades of the public service, while the high school, except where a special bifurcation of studies has been recently introduced, leads directly to the entrance examination to the university. The following table, which shows the number of boys considered sufficiently pre-

pared to be subjected to examination, and the percentage that were successful at the test, speaks for itself:

Test.	Number examined.	Percentage passed.
Matriculation.....	14,244	40
Upper secondary.....	1,355	23
Middle.....	24,385	49
Public service certificate.....	4,869	33
Upper primary.....	99,449	61
Lower primary.....	176,757	59
Total.....	321,059	.....

Relatively few girls advance beyond the primary stage, but the still smaller number examined seems better prepared than their comrades of the other sex. About 1 in 8 of the boys seem to have come to the test, and a little above half passed, chiefly owing to the greater success in the lower standards.

In a paper treating of popular education only, it is not necessary to discuss the branches of instruction which are not strictly included under that term, so the universities and their work may be said not to fall within the scope of my subject. But I wish to include in my general survey Indian education as a whole, and to praise accordingly the higher culture as we have done the rest. In fact, if we are talking of an educated community at all, we can not draw the line at the sixth standard, which represents in India even a lower degree of attainments than it does here, but we must imply something more extended. It is desirable, therefore, to see the actual extent of what is called the educated community. It has been shown already that at the present time only some 5 per 1,000 of the pupils of India have reached the university, including both arts and the professional faculties. The departmental returns show that during the last five years an average of about 18,000 annually appeared for matriculation, of whom a third only passed the test. Of the latter class something under 38 per cent proceeded no further than to the intermediate examination; 14 per cent went on to a degree in arts, and some 10 per cent graduated in law, medicine, or civil engineering. To the great majority the entrance examination is no more than a qualification for service under Government or under such private employers as require assistants of the literary caliber implied by this test, and to such an extent has this tendency grown in some parts of the country, that at least one university has been obliged to promote the establishment of an independent examination of the feeder schools, to serve the purpose for which its own doors were formerly besieged. As to the graduates, the universities have been now in operation for the last thirty-five years or so, and the total outturn in the arts faculty may be estimated at somewhere about 16,000; but the present vice-chancellor of the Bombay University, a Brahman of great distinction, has just been deploring the serious want of stamina he has noticed among university men, and their generally short lives, so that the actual number in existence must be considerably below the above figure. This, then, is the nucleus of the intellectual life of India, and, as I have said before, there is in it no representative of the agricultural or the industrial backbone of the country, even if there be any to speak of in the stages between this and the primary schools.

I will not overburden this paper with statistics showing what has been done during the last forty years in the way of extending the provisions for popular instruction, or how far advantage has been taken of these provisions. The information is available elsewhere in a form more explicit than any I could adopt within my present limits. Progress there has been, and very marked progress, though not altogether in the direction where it was most needed; and the foregoing portion of this paper is calculated, perhaps, to indicate not so much what has been accomplished as the vast amount still to be done. It is on this consideration that I am laying so little

stress on the system of education or on the State action with regard to it. Where there is no effective demand for education, or, as in India, a demand for it only among a small minority, the part that can be played by system or by State initiative or aid is insignificant, and its results are no more than an excrescence or parasitic growth on the life of the community. What has to be educated is not the mind, which can be reached from school or college, but the will, which is molded only by public opinion. The advance of the two independently of each other leads to results which are by no means free from difficulty and even danger. To take first the practical, and, I admit, the lower, side of the question, the professionally literate castes, as the returns show, are taking far more advantage of the educational facilities of the present system than the rest; so not only is the already wide gulf between the two being increased, but the too prevalent view is being emphasized and confirmed that instruction is merely a tool whereby a certain class gets its living, and with which the rest of the community has no concern. The notion once held that instruction would reach the masses best by "downward filtration" from the literate minority, was based on a misconception of the character of Brahmanic society, and has long since been abandoned. The hold of caste on occupation is strengthened by this unequal tendency, and the position of the lowest, who, like those at the opposite extreme of the social scale, are not bound down to definite functions, but are available to undertake any class of labor, is stereotyped in its depression.

I spoke, in the beginning of this paper, of a specially meritorious work to which the efforts of Christian missionaries had been directed. This is in relation to the education of the classes whose contact and presence is traditionally polluting to the rest of the Brahmanic community. To enforce, in the case of such castes, the equality of treatment in schools to which, under the Queen's proclamation of 1858 and the rules of all State departments, they are entitled, is equivalent to a decree of eviction against the rest of the pupils. Not one could, under pain of excommunication, remain, and the master himself would be in the same plight. I have myself seen, in place of the traditional rattan for corporal punishment, a row of hardened clay pellets on the tutorial desk, which were thrown with the accuracy of long practice at the impure urchins who were receiving instruction in a row outside the building occupied by the rest. The Government has had to recognize the prejudice, and to ordain that it should be met with tact and patience, but not directly infringed. Now the important feature in this digression is that these educationally boycotted castes contain over 57,000,000 souls, or 1 in 5 of the population. If it were not for mission schools and public institutions established in special tracts where such castes are strong, not a boy among them would be able to acquire the rudiments of learning. To return to the question of the relations between the minority and the masses, we already find that the real influences on public opinion are only to be learned in the court, in the field, at the well, or under the big tree in the middle of the village; and to go to the school or press for such information is to incur the certainty of being misled. The boy of the literate class, if not of town origin, spends most of his youth in a town if he aims at secondary education, acquires urban tastes and urban views of life, which unfit him for sympathy with rustic concerns, just as the peasant complains that retaining his boy up to 14 in the primary school softens his hands and makes him unable to do his full day's plowing. Then, again, the strict caste-régime that prevails among the literate community shows little or no signs of material relaxation, though in one or two points there are manifestations of revolt among a small minority who may finally succeed in leavening the mass. Thus the outlet for the youth of this class is annually growing narrower, and the market for their industry more glutted. India can only provide litigation for a certain number of legal practitioners, and the higher class of students has hitherto shown little aptitude for any other profession but that and the service of the state or public bodies, which is, again, a more or less fixed quantity. Medicine and civil engineering, for which there is an opening, are only favored by a narrow class, not



always the élite of society. Further into this question it is not necessary here to enter. It is when we turn to the moral aspects of the extension of intellectual education in a population subdivided and constituted as is that of India, that we find the gravest reason for deliberation. It is not merely that the rift between conviction and conformity is growing wider; that the head is growing faster than the heart, for that is usual, if not universal, in the experience of national education, but it is the causes that tend to retard, and perhaps to prevent, readjustment, that must give us pause. The very first and foremost educative influence in a state is that of the family, not the school. There is a phrase of Richter bearing on this that is worth remembering; so much so, that I have prefixed it to the chapter on education in my census report; but, as I do not flatter myself that I have thereby made it trite or universally known, it is worth citing again:

"The waves of the ocean, before reaching the child, break against four walls which encompass the water of his education or crystallization. Father, mother, brothers, and sisters, and a few extra people are his forming-world and mold."

And in India, as I hope I have made clear, he has also an outer line of defense, in his caste. But, withal, the main influence is that of woman. I have heard and read a great deal on the subjection of women in India, and the deadening influences of the zenána system; but, as to the latter, I can speak from personal experience, and history confirms it, that there are few shrewder negotiators, or persons more alive to what is necessary for their own purposes or the interests of their estates, than the ladies with whom one has to do business with a curtain between us. As to their subjection, whatever may be the theory regarding it—and I must admit that the authorities use brave words—in practice, and again I speak from varied occurrences laid before me in court and village—I have invariably found, if the president will permit me to use an expression the political signification of which is scarcely older than this paper, that the predominant member of the domestic partnership was a certain old woman, generally the mother, not, as I have heard is the case in this country, of the wife, but of the husband. In India, in fact, as elsewhere, "she who rocks the cradle rules the empire," and when we find that her sway in her own immediate circle is complete, her social aspirations are restricted within immutable limits, and those of her inferiors similarly kept from encroaching, and that she has no conception of any social grievance with which the elders of her caste are not competent to deal, we shall not go far wrong if we say her tendencies are likely to be conservative, and, looking at the very high place ceremonial and custom occupy in her religion and in her domestic arrangements, more probably than not she will be found to be a bigoted member of that party. Any inclination toward innovation, therefore, will be sure to be met with far more resistance from the women of the community than even from the men, and what the latter is I have given the means of judging already. In the mere matter of book learning it is less surprising to find the women backward than in regard to the abandonment of social customs which they no doubt recognize as harmful to their sex, but which, nevertheless, like some other fashions, they consider it a point of honor to endure. To explain this, it is unnecessary to go further than the antipathy of the men, especially of the literate castes, to the acquisition of learning by their partners any more than by their social inferiors.<sup>1</sup> If any other reason be required it may be found in the fact briefly mentioned above, that in proportion as the Brahmanic hold on the masses is strong, the adoption of their ideal in regard to marriage is prevalent, so that there is a continuous tendency as wealth increases to lower the age of the bride, and to seclude the girls of marriageable age, both of which practices, I need hardly remark, have an influence fatal to anything beyond the very rudiments of learning. Thus it happens that according to the census we find to every 1,000 males not wholly illiterate only 47 females of the same degree of acquirements, the disparity running in greater or less intensity through the whole community.

<sup>1</sup> For instance, out of about 15,000,000 of Brahmans, 1,957,000 of the males are returned as literate, but only 72,500 of the other sex.

Nor is there at present any sign that the disparity is on the decrease. It may be said, of course, that within this last ten years or so female education has advanced faster than that of males, and the naked figures of the annual returns are called in evidence of this. Granted; but let us look if that is the real teaching of these figures. Consider the numbers involved, actual or relative. What a drop in the ocean! Ten years ago there were in every thousand women four who were not illiterate, there are now five. There has been a growth of secondary and middle-class education among them, but the tables show that it is confined practically to the small communities of Europeans, Parsis, and Christian converts, and has nothing to do with the masses. The number of pupils in training to take charge of girls' schools has increased, but it appears due only to the accession of Christian converts, as no other caste will degrade itself to so public a function. Now, the great bulk of these converts, and to the honor of the missions be it spoken, belong to the depressed or menial section of the Brahmanic community, and take their place in their little world, not according to attainments or conduct, but by virtue of their traditional and native position. They have no influence, therefore, outside their class room, and so far as the parents of their pupils are concerned, are admissible to no share in social life. This, again, is not conducive to the spread of learning among the women of the country.

So long then, I repeat, as the disparity between the sexes in point of education continues at anything like its present extent, the influence of the home will be set dead against that of the school, except in so far as the latter acts merely as the agent for obtaining early in life a pecuniary position that will enable the recipient to dispense with further study. So long, again, as this mental divorce is the approved rule, all the education that can be imparted from without the home will be "of the man's life a thing apart." It will hang on him like Saul's armor on the shepherd boy, and for all the help it may give him in the battle of life, the Goliath of ancestral prejudice will die in his bed at a ripe old age. Knowing what it is my professional duty to know of the sentiment and practice of the home circle and domestic surroundings, to hear the great English classics or the vernacular renderings of the political history of Europe or America from the mouths of the urchins in the village or district schools, always brings to my mind Cicero's question when he saw his rather diminutive son-in-law invested with the brand his father had borne in the civil war, "Who on earth has tied Dolabella to that sword?" In later life it is too often the same, and the great principles of morality and statecraft that have been the brand of victory in the West become in Oriental hands the court sword flourished to direct the movements of a sham fight in which neither morals nor policy are at stake. With policy we have luckily nothing to do on this occasion. As to morals, though the results of a system of public instruction may not yet be apparent among the masses for reasons I have already given, the system has borne a fruit esoterically, or within the fold, which is not altogether palatable to the mental horticulturist, even if it be so to anyone else concerned. It is the results of testing intellectual proficiency and depth by means which connote moral conditions which have not yet been developed in India. Examinations in this country are, relatively speaking, successful, because it can be assumed with reason that the moral fiber of a candidate is up to a certain standard, so that it is necessary to test his intellect alone. It is not so in India, where the goal is considered attainable by the bypaths of morality as justifiably as by the highroad. In fact, in some parts of the country the art of swindling has received quite a fresh stimulus from the new field thus opened to it. Not a year passes without its crop of cases of personation, fraudulent acquisition of the examination papers, even when they are expressly printed in various towns in Europe; forged certificates of character, age, and departmental qualifications. In Bengal it is stated officially that detection is entirely dependent on accidental defects in the procedure, so that probably for every case found out ten pass unnoticed. In a lower sphere of the education of youth pupils are borrowed for a day from one school for the annual examination of another. The prosecution of a few masters for



fraudulent or forged registers of attendance had the effect of temporarily stopping the practice of submitting registers at all. A district board found it necessary to abandon the custom of giving annual school rewards because of the fraud practiced in order to get them. A municipality in another part of the country reduced the salary of a master who had offended one of the leading townsmen, first by expelling his son and secondly by refusing to give that promising pupil a certificate of good character on which he might appear for the university examination. In another similar case a fresh school was set up by the city fathers to ruin the too conscientious pedagogue. Finally, a master in a village on the border of a district got the reward at his annual examination, and then promptly transferred himself and his pupils to an adjacent village in the next district, where a second examination brought him in a second harvest. The competition for promising boys in the aided schools of the capital of India, which is carried on by public advertisements offering rewards, by active canvassing, and by other means derogatory to the dignity of learning, such as tampering with registers, falsifying transfer receipts, and similar expedients, which outside the scholastic world would be called forgery, has, it is stated, materially lowered the discipline of the whole body of pupils. The best prepared openly put themselves up to auction shortly before the examination. Others—I am quoting from the latest report to hand—confine themselves to sending anonymous accusations against the master or each other to the inspectors or other officials. In one case a riot was attributed by the master to “an improper sense of offended dignity.” In another the inspecting officer, having asked the master to explain an intricate sum on the blackboard, was stoned by the loyal pupils as he left the building. One boy in a high school, who had been punished, burnt down the school and the master’s house. The next day the temporary building to which the classes had been removed was also set on fire, and the youth who was caught thus employing the resources of civilization spent some time in a reformatory. In the east of Bengal a more complicated occurrence is reported. The English school in the town had been burned down twice in the year, on which the native gentleman who was acting as assistant inspector naively remarks that it appeared as though the master had created enemies by too strict discipline, or that an unhealthy rivalry existed between this school and another. The latter alternative seems the correct one, as I find that in the course of the year the rival school was also burned down.

The serious part of these events is not, in my view, the actual offense or the spirit which instigated its preparation, but the acquiescence in and the connivance with it by all who had any knowledge of what was intended or was actually going on. In the case of the fraudulent transfer of pupils and similar artifices to cheat the public purse or to profit by the wrong done one’s neighbor, not only every master round, every pupil implicated, but every parent must have been privy to the fraud, and acquiesced in the methods by which it was successfully carried into execution, and, remember, it is not the low-class hedge-schools where this goes on, but the secondary and, even more, the high schools that feed the university, the entrance examination to which is to nine out of ten of that class of pupils the end-all and be-all of their education. It is after passing through an atmosphere such as that which this moral apathy proves to be prevalent that the highest product of the present system is thrown onto the world, and when we hear of the educated classes in India we ought to have a clear conception of the grounds on which the application of that epithet is based. We have to appreciate not what the mouth has learned to speak, but what the heart really cherishes. We have to consider what is the relation this class bears to the masses; what part it takes in the great life of the community; what is its numerical strength, and how far it is predisposed to admit the rest of its less gifted fellows to a share in the intellectual privileges on which it founds its claims; or how far it is inclined to perpetuate a traditional monopoly. What, again, is its attitude, not in precept, but in example, toward the deeply seated influences that impair the general vitality of the country and cramp its energies? I have



touched sufficiently on all these questions to show you, to say the least of it, that they have more than one side, and that however glittering the surface that lies uppermost, it by no means follows that all below is gold. I have shown, also, the proportion borne to the people at large by the class which, by the utmost extension of the term, can be called educated.

It may be said that the progress of education, according to my view, has been insignificant. But remember, first, that forty or fifty years are as nothing in the life of a people. The great dispatch of 1854 closes with a phrase which is, I think we may all agree, well worth repetition:

“To imbue a vast and ignorant population with a general desire for knowledge, and to take advantage of that desire when excited to improve the means for diffusing education among them, must be a work of many years.”

We have also to accustom the people to a régime of equality, to which they are even now little more than strangers, and which they have received timidly and with the suspicion born of centuries of experiences diametrically opposite in their nature to those to which they are now subjected. The sway of the sword has given place to that of the scales, wherein every person in the eye of the administration weighs equally before the law.

Finally, are not we Western nations rather too prone to consider progress as a natural characteristic or tendency of the human race, and not to sufficiently realize the very narrow limits to which in that capacity it is confined? What people has shown it that has not been, at some time or other in its history, in touch, directly or indirectly, with that little spot on the north side of the Mediterranean where alone of all countries of the known world the spirit of progress has not been proved to have been implanted from outside? If it be an exaggeration at all, it is a splendid one of Sir Henry Maine, that, except the blind forces of nature, nothing moves in this world which is not Greek in its origin. How then is it to be expected that contact merely political between countries separated by half the world, whereof one alone has received the spark of Hellenic fire, will produce the same results within the same time, or measurable distance of it, as that of contiguous or colonized nations? The longitudes are too far apart for the administrative clocks to keep the same time, and a mean must be adopted which will satisfy the one that the other is moving, but not go so fast that the latter can not keep up with it.

I do not take, I hope, too pessimistic a view of the subject of which I have been treating this evening, and I have nowhere asserted that the situation is approaching an impasse, though the advance has been in some respects singularly unequal. I look for the solution of the problem not to any direct effort on the part of the State, of private enterprise, or of the literate classes, but to the stimulus of the steady advance of the masses in prosperity, in the educating influence of material circumstances, the opening of the mind by travel, commerce, and industry, all of which are now in their lusty infancy.

The following paper, presented before the Department Congress of Educational Journalism in Chicago, adds many interesting particulars to the present survey of educational agencies in India:

#### EDUCATIONAL JOURNALISM IN INDIA.

[By Thomas Denham, M. A. (Queen's College, Oxford), vice-principal Teachers' College, Saidapet, Madras, late editor of the Madras Journal of Education.]

In a paper on “Educational Journalism in India” it is not necessary, even if it were convenient, to give a detailed account of every periodical of this class which has appeared in India. Fortunately for the writer, but unfortunately for the cause of education in India, much of the information respecting these papers would scarcely deserve to be incorporated in such a paper as the present, except as affording direct evidence of the low state of educational journalism in India. The writer

will therefore content himself with a bare mention of many journals the names of which sufficiently indicate their scope. He will speak more at large of the few leading representative journals, and, what appears to him of still greater importance, will discuss briefly the causes which are, in his opinion, mainly responsible for the deplorable lack of interest taken in educational journalism in a country in which education has made rapid strides within the last half century.

Without doubt the leading educational journal in India is what was known up to within a few months back as the *Madras Journal of Education*, but which is now known by the more ambitious name of the *Indian Journal of Education*. Madras, in this matter of educational journalism as in other educational matters, has given the lie to the opprobrious appellation by which she was designated by the other presidencies, viz, "The benighted presidency." The journal was started in 1859—an important date, as it comes just after the great mutiny in 1858 and the establishment of the Indian University, a date which practically marks the birth of educational journalism in India. The features of the *Madras Journal of Education* may be gathered by a notice of it by the *Madras Christian College Magazine* in 1892: "It now contains a larger number of short original articles than it formerly did, while at the same time it devotes a considerable portion of its space to notes and news of general and local interest, dealing mainly, of course, with educational matters. Reviews and notice of works and of other educational reviews, the proceedings of the director of public instruction, and educational notifications occupy a considerable portion of its space, and some pages, in which questions are asked and answered, are set apart in each issue for the benefit of students. It is now a useful and interesting journal, and we hope that in its new and improved form it may have a wide circulation."

For the greater part of its existence it was conducted by two well-known Indian educationists, Messrs. Fowler and Barrou, who for many years bore the burden and the heat of the day in what must have been generally an unthankful task. The journal now circulates throughout India, and is officially recognized in most provinces, and yet has not a greater circulation than 1,000 copies. Since January of the present year it has had the misfortune to change its editor twice. As the *Indian Journal of Education* its character has considerably changed also, having fewer original articles and less pedagogic information. It is safe to say that no similar periodical in India can approach it as regards its size, matter, and circulation.

One other educational journal which was circulated throughout the Madras presidency may be noticed, as it is typical of the history of many similar journals in this country. In January, 1871, was published No. 1 of the *Mangalore Month and Educational and Literary Record*. This was a journal of 24 pages, edited by John Bradshaw, M. A., then head master of the Government provincial school, Mangalore, now an LL. D. of Dublin, and world known as an editor of Milton and Gray's works and Lord Chesterfield's letters. The aims of this creditable little production are thus stated by the editor in the introductory number: "It will be a record of educational news and such intelligence as is likely to prove interesting to those connected with education in this country; as, however, it is principally intended for students, we purpose in each number supplying them with such information in matters connected with these studies as either may not be explained in their text-book or they might otherwise be unable to procure."

The editor calculated that about 200 subscribers at 3 annas (about 7 cents) would cover the expense of each month's issue, and that if a sufficient increase in the number of subscribers took place he would increase the size of the journal and change its name "by embracing a wider circle than the locality of Mangalore." In spite of Mangalore being an out-of-the-way place on the Malabar coast and having no direct railway communication with the rest of the presidency, the merits of the journal were such that after six months the number of subscribers justified the editor in changing the name of the journal to the *Madras Educational Record*. In



the first number of the new venture one of the chief causes for the dearth of good educational journalism is alluded to: "That Madras is without an educational record worthy the presidency is not to be attributed to any want of ability or energy on the part of educationists, but finds its explanation in the nature of Indian society. Few care to embark on the undertaking, which, after it is fairly afloat, they may be compelled to relinquish from their being transferred to some other scene or sphere which may preclude their proceeding with it." How true this statement is the history of the journal in question goes to prove; for after a successful career of eighteen months it ceased to exist, as Dr. Bradshaw, having been appointed an inspector of schools, found he could not continue to edit the journal while holding a traveling appointment.

Of current educational journals in India, the Bombay Educational Record perhaps stands next to the Indian Journal of Education. It has flourished for many years with the help of Government support. For the last quarter of a century it has been under the editorship of Mr. J. B. Kirkham, who is now retiring after over thirty years' service in India. This magazine contains little but departmental notifications, appointments, lists of prescribed books, etc. As a rule there are about two small pages of original matter, consisting of short, pithy notes on current educational questions. Occasionally good articles are reproduced from other educational magazines. It has a circulation of about four or five hundred. Such well-known men as Sir A. Grant and Sir James Peile have taken an active interest in its welfare. The little journal has always aimed at encouraging an accurate record of facts, a study of principles and their application to the peculiar circumstances of India and a professional spirit based on a high estimate of the work and office of the teacher.

The Educational Magazine hails from Calcutta, and is the organ of the European Teachers' Association at Calcutta. It is a small periodical with a small circulation. It contains little original matter, the magazine being chiefly made up of questions on school work and extracts. The magazine ought probably to be spoken of in the past tense, as the writer has seen nothing of it for the last twelve months and has no definite information regarding its existence.

Besides these educational magazines there are other periodicals in India which though chiefly of a literary character yet give place in their columns to articles and discussions on educational topics of general interest. The Madras Christian College Magazine holds a peculiar place in the current literature of India. It is managed by one of the professors of the college who is assisted by the principal and the other professors. The articles are contributed in great measure by outsiders, and are of a general literary character. Details respecting the college appear from month to month. The magazine can scarcely be called educational, nor is it a bona fide college magazine in the sense that the students contribute to it or that it faithfully records the many agencies of the college. There are in fact in India very few college or school magazines such as are common in the large schools in England, and which contain full details of school work, sports, etc., with occasional original articles and tales.

One main reason why educational journalism in India is so rarely taken up by educated men has been already alluded to, viz, the frequent changes from post to post which fall to the lot of most educational officers in India. But apart from this deterring cause there are comparatively few Englishmen in India who take an interest in general matters of education outside their own special branch. Being members of the Government educational service their positions are assured, and so far as their own interests are concerned they see nothing to be gained by agitating for educational reforms in a bureaucratically governed country. The climatic conditions of the country, too, are such that most men are content perforce with the ordinary discharge of their duties and shun such overwork as is often responsible for the sudden and utter collapses which sometimes overtake Englishmen in India. Systematic mental work of a severe nature is almost impossible after the college or school



closes for the day. Again, among the other necessary conditions of healthy living among Englishmen in India is the periodical furlough or leave of one or two years to Europe. But when all is allowed for it must be confessed that many English educationists in India are regrettably negligent in the matter of educational journalism.

As regards the natives of the country, it must be remembered that they can carry on work of this kind only under considerable disadvantages. Educational journals in India, if they are to have a far-reaching influence, must be conducted in the English language, the common medium of education and communication of the upper classes throughout the vast continent of India. If they make use of any one of the many dialects of India they at once limit their influence by appealing to a comparatively small section of India society, and that not the most cultured portion. Every schoolboy in India can read more or less intelligently in English, and the educated native prefers to get his information through the medium of the English language, that language being capable of greater exactness of expression and being the door to a vast range of literature. It is a lamentable fact that the vernaculars of India are being increasingly neglected from a literary point of view, except for examination purposes. But English, after all, is a foreign language to Indians, and although they are at infinite pains to make themselves conversant with it, it is but natural that they should find considerable difficulty in expressing themselves clearly and forcibly in that language. In any case the task of conducting with credit an English educational journal is no inconsiderable one to the ordinary educated Indian.

Then there is the question of poverty which must be reckoned with when accounting for the small circulation of educational journals in India. Education, if it is to be given at all, must be given at a nominal charge, for the majority of students are admittedly poor. They will do anything to save the expenditure of a few annas. Journals and papers are handed on from one to another in such a way that there is no approximation between the number of subscribers and the number of readers of any particular journal or paper.

Text-books, when once they have answered the purpose of the examination, are disposed of with a callousness which argues a singular lack of interest in the subjects which for the time being engrossed the attention of the student, but which are often so disposed of on the specious plea of poverty. But the writer is inclined to look for another reason why educational journalism is so little patronized by the natives of India. He finds it in the little interest which the ordinary student or teacher takes in matters educational—a lack of interest due to a low and false estimate of education, an estimate which values education mainly for its material benefits, an estimate due in part to inherent faults in the higher educational system of the country, and to the increasing number of the examinations which throw open the doors to the services. Moreover, the teachers of the country are not organized to look after the interests of education and their own interests. Associations of such proportions and wielding such power as the various associations in America and England are unknown. What few associations do exist, and they can be counted on one's fingers, have few members, are purely local, discuss purely literary and pedagogical questions, and have no influence among teachers or on the public generally.

Annual conferences of teachers are unknown; esprit de corps is wanting. The conflicting interests of Government, mission, and native institutions may in part account for this. The minimum qualifications and resources of those who enter the teaching profession; the caste system, with the blight of its social ostracism; a bureaucratic system—all these may account for the absence of teachers' associations in India, but the painful and palpable fact remains that such aids to the teacher's position, to the cause of true education, do not exist in India. Did they exist, a different account of educational journalism in India would have to be written. There being no associations, there are consequently no organs to disseminate their views. Nor is there in India anything analogous to that excellent institution the Bureau of Education

as it exists in the United States of America, an institution which is the medium for collecting and disseminating interesting matter which concerns the welfare of education.

We have spoken of the low estimate of education which the average student has of the benefits of education. To him it is the means to an end, the end being the passing of such examinations as will enable him to secure a competency in some one or other of the Government services. Students' journals which would give hints for passing examinations might secure a fair circulation under proper management. Teachers, too, are more or less content in seeing that their pupils are well stored with just that amount of carrying knowledge which will enable them to pass examinations. They have little faith in new and improved methods for imparting knowledge and know little of educational systems outside their own.

The people of India are strong in memorizing, but not so strong in assimilating knowledge and in mental productiveness. The universities examine, but do not teach, and the educational system generally tends to accentuate the memorizing rather than the assimilating faculties. Unfortunately, there is practically no educational journalism to correct this tendency, to stimulate and inspire by proclaiming new methods, by discussing the merits or otherwise of outside systems, and by placing before the people a high ideal of the ends and objects of true education, by awakening a true regard for the profession among teachers and by giving them an esprit de corps which alone can raise them socially and morally in the eyes of the public at large. How much remains to be done this simple fact alone will show—that in a country whose population exceeds by five times the 50,000,000 of the United States the leading educational journal has a circulation of 1,000 copies.

Add to these reasons the facts that there are few educationists who have the time and not many who have the requisite knowledge of pedagogy to conduct high-class journals, that the editor's funds will not allow of good articles being paid for, that specialists can find a ready market for their articles either in the better-class newspaper in India or in journals in England, and it need not be wondered at that there are no educational journals in India which can in any way approach the high-class journals of America and England.

India has made rapid strides in education during the past forty years. There are some few signs that she is awakening to a sense of what true education means. When that time arrives, she will give expression to her enlarged views in a journalism which may be worthy of her, and which, though it can only be fostered amid disadvantages from which the educational journalism of England and America is free, will be worthy of a modest place beside the literature of these two countries.

I append a complete list (so far as in my power to make it) of all the educational journals which are or have flourished in India. It will be seen that they are many in number, but that generally they have had but a short existence, and this for the causes which have been considered.

The writer feels that the list is far from being a satisfactory one. There are, doubtless, some few journals which have not been included, and there are, doubtless, many in the list which can scarcely claim to be educational journals in the proper sense of the word, containing, as they do, much matter which is not strictly educational and nothing of matter which deals with what may be called the politics of education or with the principles of education. The list shows, however, that the educated men of India are not without their literary ambitions, although they undertake the duties connected with such ambitions far too lightly, many of them without the requisite qualifications and without a due sense of the responsibilities involved.

*List of educational journals in India*

## ENGLISH AND VERNACULAR.

	Name.	Date.	Discontinued.
Madras presidency:			
English.....	The Madras Journal of Education .....	1859	
	The Madras Educational Repository .....	1865	Date not known.
	The Student.....	1877	1880.
	The Middle and High School Friend .....	1881	Date not known.
	The Students' Monthly .....	1883	Not known.
	The Middle School Manual .....	1884	Same year.
	The Matriculation Journal .....	1884	Do.
	The Schoolmaster .....	1885	1889.
	The Matriculation Student .....	1885	Same year.
	The Madras Students' Magazine .....	1885	Do.
	The Tutor .....	1886	1887.
	The Educational Record .....	1871 1886	1872. 1890.
	The Students' Educational Magazine .....	1892	Same year.
Tamil.....	The Home Teacher .....	1888	Do.
	The Village Schoolmaster .....	1887	1889.
	The Maharani (in Tamil, Telugu, and Malayalam, devoted chiefly to female education in schools and homes. An excellent magazine, but badly supported.	1887	
Telugu .....	The Teacher .....	1888	1889.
	Upadhyay of a Kari (The Teachers' Help) .....	1892	
Bombay:			
English.....	The Elphinston School Paper (out of this small paper grew the Bombay Educational Record).....	1860	1864.
	The Bombay Educational Record.....	1865	
	The Teacher .....	1889	Not known.
Mahratti.....	The Monthly Miscellany English and Mahratta.....	1881	
	Vividha Guyana Vista .....	1881	
	Abalaluta (Friend of Womankind) .....	1881	
	Berar School Paper .....	1891	1892.
	Buhabodha for children .....	1881	
Gujarati.....	Vidyamita .....	1876	
	Stubodh .....		
Bengal:			
English.....	The Indian Student .....	1876	
	The Bengal Magazine .....	1872	
	The Calcutta Magazine.....	1874	
Bengali.....	Vanqa Darshane .....	1874	
	Vanqa Mabela (for female readers) .....	1876	
	Bbama Bodhini.....	1882	
	Babika .....	1886	
	Sarasuati .....	1881	
Hindu .....	Valavodhini .....	1874	
	Kusankar Nevarak .....	1884	
	Bahubodhini .....	1875	
Sanskrit .....	Vidyantti .....	1877	
	Guana Probba .....	1881	



## CHAPTER VII.

### RECENT DEVELOPMENTS IN THE TEACHING OF GEOGRAPHY IN CENTRAL EUROPE.

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#### INTRODUCTION.

The report of the committee of ten on secondary school studies has indicated that the study of geography in the schools is the center of all scientific instruction—the link, as it were, which connects all branches of science. The definition offered in the subreport reads: “The word makes it embrace not only a description of the surface of the earth, but also the elements of botany, zoology, astronomy, and meteorology, as well as many considerations pertaining to commerce, government, and ethnology. The term ‘physical environments’ of men expresses, as well as any single phrase can, the conference’s conception of the principal subject which they wish to have taught.” This sentence, and the subsequent explanations which will be found in the report mentioned, clearly indicate that geography is vastly different from what our fathers and forefathers thought it to be. It is the only branch in the curriculum of schools, below the university, which connects the mathematical and natural-scientific with historical knowledge, and will always furnish the strongest remedy against mental waste. The fact that geography has of late found so much attention in educational literature, especially in central Europe, suggests a presentation of the leading ideas, and enumeration of the more recent inventions, devices, and appliances for teaching. This is attempted in the following chapter.

#### HISTORICAL SKETCH.

It is difficult to state with any degree of certainty at what time geography was introduced into the curriculum of schools, to what extent, and in what manner it was taught. This much is certain, that geography, as a branch of study, has not kept pace with its scientific development. Although geography as a science was represented in ancient times by such noted men as Pythecas, Strabo, Pliny, and Ptolemy, and although during the Middle Ages the Moors fostered the study of geography, it can not be said that the schools of these periods had given to geography an adequate importance. Nor did the vast extension of the geographical horizon at the time of the great discoveries, during the fifteenth century, bring it about that geography received the attention and respect it deserved as a school study. The great church reformers in Germany comprehended the value of instruction in knowledge of nature, but the intense religious feeling of the time and the renewal of the study of the classical languages prevented a renewal of nature-study—in fact, religion and language ruled supreme in the courses of study during the sixteenth century. Of the great educators of that period, Sturm, Trotzendorf, and Neander, only the latter bestowed any attention upon geography. Neander published a geographical textbook in 1583 in Eisleben (*Orbis terræ partium explicatio*). This book still showed a complete dependence upon the knowledge of the ancients, and topography is with the author simply an enumeration of historical notes, copied more or less extensively. Nevertheless the work of Neander may be considered a great step in

advance, and up to the year 1624, when Philipp Clüver's geographical works appeared, Neander's books were the only ones used extensively. But the position geography held among the branches of study remained a subordinate one; at best, it was a supplement to the reading of Roman authors. Not until the one-sided philological character of instruction was attacked with success by Bacon and Montaigne, and not until Locke and Comenius demanded the consideration of nature-study in schools, did geography become a "full-fledged" branch of study. Comenius said: "Instruction should begin with sense-perception, with observation of real objects; from sense-perception real knowledge grows; hence lessons in geography must necessarily be object lessons at first. It must start from knowledge of home."

The leader of the school of pietists, Francke, considered geography in German schools a means for training in Christian wisdom, which he placed side by side with Christian righteousness, as aims of every education, "because anyone who desires to become a sensible man, useful to the Commonwealth, should know the principles of astronomy, geography, physics, and history, though he may never enter a higher seat of learning." Palestine and Germany were treated most extensively in the Francke schools, "so that the citizens should be well acquainted with their fatherland, and could study biblical history with the aid of sacred geography." Generally speaking, Francke followed, in the treatment of geography, John Hübner's "Brief Questions," which were published in 1693, and for many years were the only geographical text-books used in the schools of Germany. Hübner does not consider the natural condition of the country, and merely treats of the political and statistical elements of geography. This can not be explained better than by quoting a page from Hübner:

"Where is Austria situated?—Ans. It is situated so that the Danube River flows through the center, above are Bohemia and Moravia; to the right is Hungary; to the left Salzburg and Bavaria, below Styria. The whole country belongs to the Roman Emperor of the German nation; his title is Archduke of Austria. The religion throughout is Roman Catholic.—Ques. What do we note in Austria?—Ans. Almost in the center of Austria the little river Enns (Latin, Anissus) empties its waters into the Danube, and divides the country into two parts. That which lies to the right—that is, toward Hungary, is called Nether-Austria, or the country below the Enns (Latin, Austria-inferior); that which is situated on the left, toward Bavaria, is called Upper-Austria, or the land above the Enns (Latin, Austria-superior). In Nether-Austria we have to note the following places: First, Vienna (L. Vindobona), situated on the Danube, is the capital and residence of the Roman Emperor. It is an excellent fortress and the true vanguard of Christendom, having been beleaguered twice by the Turks, in 1529 and 1683, without being captured. The city has a bishop, but he is not an independent prince of the realm, and it has an ancient university. 2nd. Krems (L. Cremsa), a fine city situated on the Danube, a little to the left. 3rd. Neustadt (L. Nova Stadium) is commonly called a suburb of Vienna, and is situated below Vienna near the Hungarian line, is a brave fortress. 4th. Kloster-Neuburg (L. Monasterium Neoburgieum), situated not far from Vienna, and is the place where his Imperial Majesty performs his devotions. 5th. Laxenburg (L. Laxemburgum), and 6th, Ebersdorf (L. Ebersdorffum), are both situated below Vienna, and they are places where the imperial court often seeks diversion and pleasure. 7th. Schönbrunn, close by Vienna, is an incomparable pleasure-house of the present Roman Emperor. 8th. Baden (L. Thermæ Austriacæ), is noted for its warm springs. 9th. Starenberg (L. Starenberga), the castle and seat of the Starenberg family. 10th. Weitra, a princely possession situated near the Bohemian line, belonging to the Fürstenberg family."

Up to the close of the eighteenth century, instruction in geography was conducted in the spirit of Hübner, that is, purely historical and practically political considerations decided the selection of matter. Then came the great revolution in pedagogical views, started by Rousseau. It had great influence upon the formation of

geographical instruction. Rousseau demanded objective instruction (object lessons), saying: "In every study signs are worthless without the ideas they are to represent. Nevertheless the child's study is confined to signs; it never becomes able to understand the things themselves. While one endeavors to give him a description of the earth, he makes the acquaintance of the map; he learns the names of cities, countries, and rivers, of which he has no adequate conception. To the child they are nowhere except on paper; it does not see them, or anything that would indicate that they are more than words."

At another place Rousseau says: "That city in which the child lives, the country house of his father, should be the first two points of departure in geography; then should follow the places lying between them; the rivers in the neighborhood; lastly, the position of the sun and the mode of finding one's way by learning geographical directions. \* \* \* The child should make a map of its own, however simple, which should contain only two points at first; others to be added as instruction proceeds, and as it learns to estimate distances and positions. \* \* \* Generally speaking, never place the sign before the thing, unless it is absolutely impossible to produce the thing itself so that it be seen; for the sign absorbs the attention of the child and causes the thing it represents to be forgotten. Things! Things! I can not often enough repeat that we give too much importance to words; with our talkative education we produce prattlers."

The fundamental ideas of Rousseau found enthusiastic appreciation in Germany, and were practically carried out, at least partly, by the philanthropists of Dessau and Schnepfenthal. The influence of these schools was essentially aided by J. Christian Gatterer, who especially emphasized the physical part of geography in his *Sketch of Geography*. Topography had hitherto not been considered. The progress made in the study of geography at the close of the last century was very great, and much of what was then demanded by the greatest educators and reformers may still be demanded to-day.

Kropatscheck sums up the vital principles of geographical instruction advocated one hundred years ago, as follows: "The one principle is unassailable, namely, that geography, among all the branches taught in school, is the one that needs sensualization most, hence it is essential to train the pupils in self-seeing, in sense perception. This can best be done by beginning the instruction with knowledge of home, as Schütz in Halle does, proceeding from the city to the Saale country and gradually extending the outlook upon Germany and Europe. But the instruction must be articulated into several grades, for each of which a special book and special maps are required. However, the best maps will be useless if the student merely memorizes and fails to understand the map. The map must not be overcrowded with names, but should contain only that which is necessary matter for each grade. It must represent the various European countries on precisely the same scale. It would be very well if they contained no names at all, not even initials, which would lead to mere guessing. Every map must regularly be compared with the globe, so that the pupil may be trained in studying it from different points of view, in order to firmly impress upon his memory the positions of places, courses of rivers, and elevations; a comparison with the globe will also facilitate the estimation of distances. If he has thus become familiar with the map picture, he should draw the outlines of the country into a network of meridians and parallels. This free-hand drawing of the countries should be aided by the now well-known devices of applying geometrical figures. In the literature of the period we find very pronounced warnings against overdoing the map drawing, for it would easily degenerate into a mere pastime and would lead to false representations, since no scholar's drawing would be as correct as the drawing of the printed map."

Among the men who worked assiduously in the line Gatterer had pointed out, Herder may be mentioned. He had been inspired by Kant, and wrote an admirable address on "The pleasure, utility, and necessity of geography." Herder in this



oration advocated the placing of physical geography in the beginning of all geographical instruction; also he emphasized the importance of geography for the other sciences, especially history, saying: "How does it aid a youth if he merely knows what has happened and can not locate events? Only through the aid of geography will it become clear to him why certain people had to play a rôle upon the historic stage and could play no other; why the sciences, inventions, and arts—indeed the whole civilization—took the course it has taken and no other. Geography is the basis of history, and history is nothing but the geography of times and nations set in motion. He who studies the one without the other will understand neither, and he who despises both should live like the mole, not upon but in the earth. Hence, happy is he whose occupation with geography does not merely fill his memory, but forms his soul and opens his mind." At another place Herder says: "The Egyptian horse, the Arabian camel, the African lion, the American alligator, etc., are more noteworthy symbols and features of some countries than the changeable boundary lines which were drawn by a deceptive peace, and which the first war following may change again."

The greatest progress, however, was made in geographical science, as well as geographical instruction, at the beginning of the nineteenth century, under the influence of Alexander von Humboldt and Carl Ritter. Humboldt, in the most monumental book of the century, his *Cosmos*, represented the entirety of terrestrial natural phenomena as a system of causes and effects based strictly on natural laws. In this he was successful as far as it was possible to be with the mass of geographical and physical knowledge accumulated up to the middle of our century. Humboldt prepared the first presentation of vertical profiles and most excellent maps. He it was who introduced the study of comparative elevations; his mathematical and hypsometrical data enabled him to furnish the basis for a geography of plants; his map of Central Asia gave to the relief of a large continent an entirely new formation, one that is adhered to in the main to the present day; together with Leopold von Buch, he advanced a new theory of the formation of volcanoes; by means of his isotherms he, as it were, compelled nature to reveal the disturbing meteorological causes, and this ingenious invention acted not only as a light in the field of meteorology, but also helped to illustrate the working of natural forces. He has thus explained to us a large number of facts of physical geography.

Ritter, in building up geography as a science, profited by the enormous forward stride the natural sciences had taken through Humboldt. Even before the appearance of the *Cosmos* he acknowledged clearly and distinctly the idea whose realization has made his name immortal. This was in 1804 in the preface to his first work on Europe. "Geography must be delivered from the spiritless treatment of textbook writers, who heap up in a desolate chaos names and numbers; from this desolate heap of useless particles an organic lifelike whole must be developed which corresponds to reality; from the tedious, because thoughtless, description of the earth must arise a knowledge of the earth, i. e., a science which investigates causal connections and enlivens intellect and imagination. Geography must virtually become a science." "I endeavored," he said of his juvenile but very important first attempt, "to make geography pragmatic, if I may use that term. The earth and its inhabitants have an exact reciprocal effect upon each other; neither of the two can be represented faithfully in its relations without the other. The land influences the inhabitants and the inhabitants influence the land."

Humboldt and Ritter were true friends who were never envious of each other; they worked hand in hand during the forties and fifties in Berlin. They may be called the founders of modern scientific geography. Ritter published his investigations chiefly in a large work entitled *Geography in Its Relation to Nature and the History of Mankind*. Alas, the book was never finished.

"If the earth," said Ritter, "is not a mere lifeless, dead aggregate of inorganic nature, or as Herodotus expresses it, a disk made on a potter's pallet, but a real and peculiarly organized natural body that constantly develops new forms, bearing new

germs of life for further development in the course of centuries and millenniums—then geography assumes the character of a unity through which, as its life principle, it becomes a whole and enables us to represent it systematically; not until then will geography become a formative science for the human mind, a necessary link in the system of sciences.”

Among the men who promoted Ritter's ideas the following deserve mention: Berg-haus, Roon, Vogel, Daniel, Kloeden, Günthe, Pütz, Sydow, Oberländer, Delitsch, and others, but above all Peschel, whose erudition, art of representation, and rare skill in teaching exerted great influence upon the geographers of the present day.

In our days geography, both as a science and as a branch of study in schools, receives the attention and promotion it so fully deserves. Noted men are successfully engaged in expressing the ideas of Ritter, and in securing for them an introduction into German elementary schools. These men are Wagner, Kirchhoff, and Egli. Herbart's idea was specially influential in securing for geography an introduction into the courses of study of secondary and elementary schools, and in giving it a pedagogical value. He said: “Geography is an associating science, and must make use of the opportunities of connecting many branches of knowledge that can not stand alone. Without geography all knowledge remains unstable, for historical events can not be fixed by positions and distances; without it natural products are not traced to their origin, etc.”

Geographical instruction, at the present time, can draw upon a great mass of interesting material. It is the task of the teacher to sift, arrange, and present it in accordance with the laws of pedagogy. The rational formation of geographical instruction in the sense in which Germans speak of “educative instruction” (that is, instruction placed in the service of the training of the will), is still an aim to be reached. Hummel and Matzat are doing a great deal in this direction (see Bibliography at the close of this chapter). Teachers and technical geographers in Germany have an organ in which they discuss questions of school geography. This organ is Seibert's *Zeitschrift für Schulgeographie*, which periodical has secured for itself an honorable position in modern educational literature.

#### GEOGRAPHY IN THE MODERN SCHOOL.

[By Dr. Edwin Zollinger, Basel, Switzerland, in *Zeitschrift für Schulgeographie*.]

If we consider the enormous progress the human mind has made during the last decades in all domains of exertion, especially in that of technology, and if we see that everything tends toward accomplishing great things with small means, we are unconsciously induced to review our own domain, that of education, and ask whether we have been keeping pace with the progress of the times and whether the greatest possible accomplishments are aimed at by means of the least possible exertion on the part of the pupil. The question can scarcely be answered in the affirmative; the present time demands peremptorily a reform in education, and particularly improvement in method.

It would be altogether wrong to formulate by means of logical speculation a principle for all the branches of instruction, according to which the matter of instruction is to be offered to the juvenile mind. The contents of the different branches are different; hence the methods should be different. Only one general requirement can be made, and that is, that they all obey the laws of logical thought and judgment. Hence the attempt to establish a uniform system of instruction and method is to be rejected as something unscientific, as something resembling the scholasticism of the Middle Ages.

In several branches of study the views have gradually cleared; for instance, sensualization and the use of experiments have become the leading principles in nature study. In geography, however, no such well-defined method has been agreed upon, chiefly, I think, because this study has rarely assumed an independent position; it has always been coupled with some other branch—now with nature study, at other



times with history. A natural consequence was that the treatment of these branches was transferred to that of geography, although, according to its character, it demanded a special method of its own.

Approaching the question of what position geography should occupy in the organism of school it seems advisable to first throw a glance upon the growth of geography as a science, for pedagogics and methodology would not be able to give us a competent reply.

I. Antiquity and the Middle Ages produced no men who exclusively devoted themselves to the science of the earth and attempted to develop it methodically. It is our nineteenth century which deserves the honor of having done this. As a representative of former centuries, Varenus stands in lonely grandeur as a scientific geographer. In the year 1650 he published a remarkable book, which has recently received the honor of a modern translation; it was entitled *Geographia Generalis*. In contradistinction to the former cosmographs he did not consider small portions of the earth, but the earth as a whole. Two centuries passed before another remarkable book on the subject was written. It was done by Alexander von Humboldt in his *Cosmos*, after men like Torbern Bergmann, Johann Reinhold Forster, and Horace Benedict de Saussure had promoted physical geography considerably. In this grand work and in other writings, chiefly in his *Views of Nature*, which were magnificent pen pictures in noble language, Humboldt appeared as a promoter of science with an immense success. He became the founder of the geography of plants, the first investigator of the earth's magnetism, and the chief promoter of the science of volcanic phenomena. The most important fact for us is that he has shown in examples of surpassing beauty and convincing strength the intimate relation of the various kingdoms of nature.

Humboldt was not an academic teacher; in his old age he went to hear lectures on geography delivered by Carl Ritter, the same man whom he had befriended with this science. While Humboldt spent his entire fortune in extensive journeys in the equatorial regions of the new continent, so that in late years he had to accept a pension from the King of Prussia, Carl Ritter did not travel, but during his thirty-nine years of academic teaching disseminated his ideas and enlisted in their favor a large number of scholars and disciples. He was also very fruitful as an author. His later masterpiece was: *Geography in its Relation to Nature and the History of Man, or a General Comparative Geography: A Secure Foundation for the Study and Instruction in the Physical and Historical Sciences*. Second edition, Berlin, 1822-1859. The first volume treats of Africa; the following 18 volumes, each numbering over 1,000 pages, are devoted to the continent of Asia without exhausting the subject. No one before Ritter had attempted to collect the entire knowledge of a continent and scientifically present the investigations and observations of others.

At the close of the first volume Ritter offers a review upon Africa which is characteristic of his views. We see from this that he designates the continents as "the great individuals of the earth" who resemble one another in special "family features." The features of Africa consist in "the peculiarity of its coast line having no large indentations; \* \* \* in the simplicity of the contrast between high and low land; \* \* \* in the incomplete development of large systems of streams; \* \* \* in its position to the course of the sun, by which this continent is divided into two almost equal parts with regard to its climatic conditions; \* \* \* in the insignificant contrast of its general conditions, and the greater similarity and uniformity of the whole." "In this earth individual, which, physically, is less developed than others, fewer natural impulses exist for the development of the consciousness of the human race; hence the history of the race shows little progress. The color of the skin, the physiognomy of the African are both less differentiated and less uniform. This fact is in harmony with the physiognomy of the continent, which shows few variations in its main forms and parts." The cumbrous, compact form of Africa, Ritter thought, was reflected in the type of the negro, while on the other hand the



elegant well-articulated formation of Europe was reflected in the symmetry of the Caucasian race and in its high intellectual development. This seems to be a kind of geographical science of predestination.

This philosophic consideration, this attempt at connecting the nature of a country with its history, Carl Ritter calls "Comparative geography." He was still engaged in his large work when opposition was offered to his views by Julius Fröbel in an essay entitled: "Some remarks concerning the present condition of geography." Fröbel said: "Comparative anatomic investigation searches for relations in the structures of a large number of individuals, and attempts to demonstrate similarity or dissimilarity, and derives from them general morphologic laws. If we introduce the idea of individuality into geography it would be the earth as a whole that would have to be called an individual, but never a country, as Ritter claims, however well defined it be by natural boundaries or its history, for both are accidental and changing. \* \* \* To compare geographically one country with another seems like comparing anatomically an arm with a leg, which, of course, would be interesting enough. Laws, however, which have the same value for the science of the earth as for the science of the human body derived from a comparison with other animal bodies, could be obtained only through comparison of terrestrial nature with a nature of some other heavenly body, if this thing were possible."

Ritter, in an extensive letter to Berghaus, replied to this attack, but all he said amounted to a panegyric on his own method, which had caused a reform in science, and was either imitated by a number of learned men or worked out in specialties of various kinds. What he said was not a refutation of Fröbel's view.

Julius Fröbel soon emigrated to Switzerland and occupied himself after that more with politics than with science; hence the objection raised against Ritter was not further emphasized. Ritter received general recognition for his "Comparative geography," and all who had taken up geography from the historical point of view accepted his method as the only proper one. This caused a standstill of several decades in the methodical development of a science. According to Ritter's dictum that the earth was only a stage for history, his school treated geography merely as a basis of history and thus degraded it to be history's handmaid. But since it was acknowledged that knowledge in mathematical and physical geography was desirable, these two branches were given over into the hands of the teachers of mathematics and natural sciences, and thus the unity of the science was broken up.

Oscar Peschel deserves praise for having reestablished the connection of the various geographical sciences. Acknowledging the high merits of Carl Ritter, Peschel concludes "that Ritter had never solved a problem of comparative geography. \* \* \* He investigated the reflex action of the horizontal and vertical formation of dry land upon the course of human culture, a thing that has nothing in common with the procedure called 'comparative geography' \* \* \*. The problem of the latter science consists rather in finding the similarities in nature as the map drawer represents them to us." In this Peschel saved the epithet "comparative," but he conceived the problem less extensively and profoundly than Ritter. Peschel prepared in his acceptance of the word "comparison" so-called geographical homologies—Africa, Australia, and South America—Borneo, Celebes, and Djilolo. Peschel's works are written so that the general reader can understand them without special preparation. Geography was thereby popularized, but not at all elevated scientifically. Peschel confirmed, as it were, the view that geography was a matter of self-evidence, a branch which every teacher could teach without special preparation.

During the seventies an important change took place in the views of the leading scholars. A large number of universities established chairs for that branch of study. From the death of Carl Ritter, in 1859, till 1872 only three professors, B. G. Mendelssohn, in Bonn, Fr. Symoni, in Vienna, and J. J. Egli, in Zürich, gave lectures on geography. From among the men who, after 1872, devoted their lives to the teaching of geography, F. v. Richthofen, Supan, Marthe, and Gerland may be mentioned.

They promoted and enriched the science by publications of great value, and especially fostered the teaching.

From utterances of these men it is plain that the term "comparative geography" is not strictly adhered to any longer, partly because the deep philosophical conception of Carl Ritter aims more at finding causality than at comparison; partly also, because the importance which Oscar Peschel had given to the term "comparison" confines itself to a part of geographical investigations. Modern scientists have returned to the technical term "geography," which is not understood to be knowledge of the earth, but knowledge of the surface of the earth. This defines its limits with regard to other sciences, notably geology.

So, then, geography is to be considered as a science of the surface of the earth and the organic beings thereon as well as the formation and configuration of the landscape. It is claimed that the school method should not only proceed to describe, but especially point out, reciprocal relations and dependencies of the various factors. The method in geography has, therefore, nothing to do with that of history, but it is that of the natural sciences. Indeed, it is in our latter days called a natural science, and Gerland, in his attempt at building up the science to a complete unity, banished the human element—i. e., the history of man—entirely from the confines of geography. No one seems to have followed him to this extreme. On the contrary, man and his settlements are now considered as determining agencies that change the face of our planet. Not only the civilized nations are drawn into the compass of observation, as in the case of history, but also savage people. Their dependence upon the soil is considered in a manner similar to that in which plant families are represented biologically.

Meanwhile, some people desire to see geography occupy a position subordinate to that of history. They desire to represent it simply as the stage upon which historic events are played. This view necessitates an unequal treatment of the various continents, because certain regions which have no historic interest must be neglected. Furthermore, such a geography is mainly an enumeration of names and dates; it does not appeal to the intellect, but chiefly to the memory, and is therefore to be rejected. On the other hand, the philosophic view, according to Ritter, makes too great demands upon the intellect and capacity of pupils, and hence must be rejected also.

There is, therefore, nothing left but the third view, which considers geography as a natural science. It will not be difficult to support the demands which at the present day are made upon the instruction and the teacher of geography.

II. Teaching is not a trade. The teacher should not only know and understand what he is to present to the pupil, but the interests of freedom and independence in the mode of treatment demand that the extent of his knowledge and skill be vastly greater. The higher his aims are, the deeper will he have penetrated into the fundamental sciences of his branch. A teacher who, in a middle grade for instance, teaches the elements of mineralogy must be expected to have a clear idea of the inner structure and chemical combinations of those natural bodies which he has to describe and explain. Of a teacher who has to teach geology, even though it be in the most elementary form, we presuppose, as a matter of course, that he has studied mineralogy. The simple result of this argument is that the geographer must have studied geology, for the forms of the earth's surface and the constant changes going on on it are consequences of the combinations of matter and can be understood or explained only if the geological formation be understood.

What structural difference, for instance, exists between the steep-pointed horns of the high Alps and the compact, terrace-like knolls of the lower ranges at the foot of the Alps? It is explained by the fact that the peaks consist of homogeneous crystalline rock, while the foothills are built up of sediment deposited in layers by the action of water. How different is the landscape around the lakes in northern Italy and those in the phlegreïc fields! The former have a foundation of erratic material,



which has round forms enveloped in luxuriant vegetation; in the latter the foundations are volcanic productions, which were accumulated or heaped up in regular, almost mathematical, forms. Can there be a greater contrast than between the Vierwaldstätter Lake and the lakes in the Albanian Mountains? The former lies in a system of valleys crossing one another, the latter in the craters of extinct volcanoes.

In describing the flora and fauna of the earth the teacher must be able to enumerate and describe the various plant and animal families. He would give himself a testimonial of poverty if he were to use names with which he can connect no ideas; hence he must have studied botany and zoology at least in their elementary form. In the treatment of anthropographic conditions he need not necessarily be an historian, for he deals not with questions of the past but with those of the present. Hence it is of great advantage to him to be acquainted with physical anthropology.

Instruction in geography, then, presupposes knowledge in geology, botany, zoology, and mineralogy. We rarely find a historian who understands all these branches, because his inclinations and studies have led him into a different direction. If, therefore, geography can not be represented by a special teacher, it would be best to put it into the hands of the teacher of natural science. Such a combination will elevate this branch not only materially, but also formally; for in this case the purely narrative method of the historian is not applied, but the developing method of the inductive sciences; geographical facts are not offered to the memory as mere names, but as concepts, and things are brought together which are in causal connection, not in a purely accidental, such as battles and mountains or heroes and islands. When Vesuvius is mentioned, it is not only stated that it buried Pompeii, Herculaneum, and Stabiae, but by the aid of a schematic profile the formation of the mountain and its activity will be explained. If, perchance, pieces of lava, bombs, and lapilli are shown to the pupil the entire knowledge will form a correct and indelible image in the mind, better than can be done by reading long descriptions.

The terrace landscapes of northern China and the pampas of La Plata owe their peculiarity to the soil, the "loess," a specimen of which material, if picked up near Basel, near Aarau, or in the valley of the Rhine, can demonstrate the peculiarities of that soil and induce far-reaching geographical conclusions. In studying the glaciers the teachers should not neglect to exhibit a small piece of rock, polished or scratched by the movement of a glacier, taken from an accumulation of rocks brought down by a glacier. If this specimen be found in the neighborhood of the school—that is, in a place situated at a great distance from the present glacier—the pupil will conclude that glaciers must in prehistoric times have had a much larger extension than now. His mind will, by arriving at such a conclusion, not only gain an impressive fact, but grow in capacity. The various coast lines and their formation, such as the Giant's Causeway, in Ireland, the sandy coast of northern Germany, the Mangrove coast of Venezuela, and others, should be shown in pictures which may be used profitably to teach the pupils something of the dangerous life of the coast population.

If there is any part of geographical instruction that profits by the mode of treatment applied in natural sciences, it is map drawing. Of the numberless methods advanced, in order to acquaint the pupil with geographical data by means of a drawing, not one has gained general approbation, because none of them treat nature correctly. All do violence to nature in attempting to force it to conform to a pattern. Geometrical figures and lines are used within which or around which the coast line is drawn; in fact, the map picture becomes a mathematical problem. Those who advocate this procedure forget that the configuration of continents is not made on geometrical lines; that the surface of the earth is the result of innumerable forces and is constantly changing. The earth's surface has neither straight lines nor plane figures, simply because the earth is a sphere.

The study of any continent should begin by pointing out the errors in cartographic representation. Notably: Africa, from north to south, measures one-fifth of the



earth's circumference; the Pacific Ocean, in equatorial direction, measures one-third. These facts can be expressed on the plane only by diminishing the dimensions near the margin. When the various modes of projection are treated (for instance, Mercator's) the distortion of a continent becomes obvious in the comparison of various projections. Hence it is a useless, because senseless, demand to require of a pupil that he should remember the exact configuration of a continent so that he may draw it from memory; senseless, I call it, because there is no faultless model. In a Greek ornament the different parts fit together according to given measurements, but not in a geographical map. In the latter there is no right or left, or top or bottom side, as in any other drawing, but merely the position within the network of meridians and parallels. If there is anything to be remembered it should be longitude and latitude of certain points, especially the latitude, because on that is dependent the temperature and climate.

I state again that the map is only a symbol of the earth's surface, and it is this surface that is to be described, not the map. It is best to do this in the manner in which any other natural body is described. In teaching botany a plant is not drawn in its entirety, but only certain parts which are to be brought to the attention of the pupil, either because they can not be observed easily, or because they are of particular interest for the comprehension of plant life. In similar manner a complete image of the country is to be drawn on the board in a step-by-step procedure. I have found it to be useless to draw that which the map represents correctly; but all indistinct points and facts must be brought out, as well as those that are of special importance; all these must be drawn. To give an instance: How laborious it would be to draw the whole of Italy on the blackboard! How simple, on the other hand, if in one lesson the valley of the river Po be drawn; in a following lesson the region around Rome, with the Albanian Mountains; then the Gulf of Naples, and in a subsequent lesson Sicily, with the various neighboring volcanic islands. These details can easily be brought into close organic connection with the aid of the map.

The third dimension of space especially must be brought to the comprehension of the pupil by special sketches. A practiced eye can easily see it, but to the pupil the flat-surfaced map does not convey a correct idea of the third dimension. Hence, not only the ground plan but also vertical cuts and profiles must be sketched. The latter will, in the nature of the case, always exhibit exaggeration, but it is extraordinarily instructive to give a profile, for instance, of Sicily in the latitude of Mount Ætna, or of South America in the latitude of the Aconcagua, in proper relation of height and distance. Still better would it be if the sketch were drawn on a curved line showing the curve of the surface. It is astonishing to see how insignificant the vertical dimension is in comparison with the horizontal.

In opposition to Peschel, who claims that during the geography lesson the pupil should be hurried from page to page in his atlas, I am disposed to say that that instruction is best in which the atlas is used least, and in which drawing and gradual development of the subject on the blackboard is resorted to. Like a text-book, the atlas has the chief object of affording opportunity for review at home. I should consider him a bungler who would during the lesson rely on the text-book or the atlas, and require his pupils to use their index finger on the map all the time. An independent teacher will instruct with the aid of a large wall map and the blackboard, at least in higher grades; text-book and atlas he will leave to the pupil's own use. Naturally the pupil should learn to read print, but also to read maps. The drawing referred to in the foregoing paragraphs will be specially adapted as an introduction to the comprehension of printed maps.

It is readily admitted that drawing is an art which is not at the disposal of everyone; but everyone can acquire it to the extent in which it is here required. Of course he must be conscious of what should be drawn, and sketches must be prepared at home just as orations are prepared in the solitude of one's study.

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NOTE OF THE COMPILER.—For this kind of teaching the silhouette practice maps, invented in this country, are eminently practical. See p. 315.

Prof. John Goodison, of the State normal school of Ypsilanti, Mich., who died recently, published not long ago in the *Popular Educator* a series of articles on the subject: "Recent developments of geographical teaching in Europe," which contain a number of very valuable suggestions, and are an example of careful, thorough research. Upon request, Mrs. Goodison kindly placed these eight articles at the disposal of the compiler, who takes the liberty of inserting them in this chapter.

*I. Introductory.*—In all well-ordered mercantile establishments there occurs at more or less frequent intervals an event known as taking stock. By its means, in combination with the usually attendant trial balance, the prudent merchant learns his business whereabouts—what items of stock have in the past proved saleable or otherwise, and hence what need retrenching, abandoning, or increasing. He discovers his business deficiencies, and can determine in what directions he must employ his energies to secure further development and improvement.

So excellent a custom would seem to deserve imitation in the teaching world. It would be a commendable and a valuable work to take at suitable intervals an account of our pedagogical stock in trade—to learn in what state as to profit or loss our balance sheet may stand—to inquire what of our past stock of methods and material is dead stock to be discarded, and what has proved of real value and in what direction we are to look and labor for additions and improvements.

It is the purpose of these articles to attempt such a stock taking in regard to the subject of teaching geography, and, more especially, to give an account of the work done in this direction in Europe during the last decade.

It is probable that not many people know what was the state of geographical teaching in our schools some twenty-five years ago. Its subject-matter was a dry, meaningless, unrelated mass of names and locations, pieced out here and there with vague statements about products, etc., with some scraps of history thrown in with the charitable purpose of making the geography lesson interesting—a common expression at the time. The method was mainly pointing out and naming bays, capes, mountains, cities, etc., upon an outline map—itself a part-colored affair, guiltless, save for a little mountain shading, of any attempt to express physical features.

I can well remember a geography recitation to which I listened when visiting the Michigan State normal school as an intending student. Upon the wall in front of the class hung a large outline map—Pelton's—upon which the mountains were drawn as single peaks arranged in a continuous line. Each member of the class in turn advancing to the map pointed out and named five places. I much admired the readiness and certainty with which one young man recited—an admiration which ceased, however, when I learned his method. These outline maps had numbers attached to the various features they contained and corresponding to the names given in a key. The pupil was supposed to study the lesson for the day in his atlas, aided by a manual of "Local geography." But my friend was the happy possessor of a "key" and merely memorized the names with their corresponding numbers, never troubling himself to look out anything in his atlas. At recitation he merely looked for the numbers with which he had associated the names. I think perhaps he knew as much about geography as the rest of the class, for their knowledge was merely of the map and not of the things represented on the map—a so-called "Local geography." But of the great physical facts of the earth's structure, of the relation of contour and reliefs to hydrography, to climate, to organic life, and to man's social and historical development nothing whatever was learned. The first effort to remedy this state of things was made by Cornelius S. Cartée, principal of the Harvard school, Charlestown, Mass. His physical geography and the accompanying atlas were models in every respect. The time, however, had not yet come for a new departure, and the excellent work had but little circulation. The harvest was reaped later by Colton, Fitch, Warren, and others, whose "Physical geographies" were a sign that teachers were awakening to a consciousness that the study of geography was more than a matter of names and locations. Great, however, as was the advance indicated by the appearance of these works, they still, to a large extent, represented the prevalent idea that in the lower grades the teacher's work should be restricted to local geography. Physical geography was regarded as a high-school study. A conception of the unity of the subject had not yet been reached, and these works consisted mainly of brief separate treatises upon the sciences which geography must necessarily call to her aid. The earth was almost lost sight of in the mass of details drawn from many sciences, but of the "Erdkunde" of Ritter and Humboldt there seemed to be no conception. Most of these books closed with a "Physical geography of the United States," and it is somewhat surprising that not one of the skillful writers followed out this idea, giving a physical geography of the oceans and continents on the same lines.



The realization of this idea—the presentation to the teaching world of the concept of geography as one science dealing with the earth as its subject-matter and recognizing a casual relation between all classes of geographical facts—was to come from another hand. Arnold Guyot, trained in the school of Ritter and Humboldt, brought to us the results of the European in favor of better geographical teaching. Previous to the advent of Carl Ritter, geography had occupied but a subordinate place in the schools. It was regarded as the handmaid of history and other sciences—merely a convenient register of the locations of places and an aid to readily finding them when wanted. In 1804 Carl Ritter, who had been educated at Salzmann's Institute, in Schnepfenthal, and later had spent some time with Pestalozzi, published the first volume of his *Europa*. In the preface he says: "My first aim is to give the reader a vivid picture of the entire land, of its products of nature and art, of the world of man and of nature, and to so present this as a connected whole that the most important results concerning nature and man will develop themselves through reciprocal comparison. \* \* \* The earth and its inhabitants stand in the closest interconnection, and one can not be presented in all its relations without the other. Hence history and geography must ever remain inseparable companions. The land works upon the people, the people upon the land." In 1804-1806 he issued from the press of the Schnepfenthal Institute his *Sechs Karten von Europa*, with explanatory text. I am the fortunate possessor of a copy of the second edition (1820), discovered by accident in a box of old maps, etc., in Siemon & Bros.' bookstore, Fort Wayne, Ind. Of the six maps, the first presents the distribution of cultivated plants in Europe; the second, the distribution of forest trees, shrubs, etc.; the third, of wild and domestic animals; the fourth, the chief mountain chains of Europe; the fifth is a profile representing the leading elevations, with regions of vegetation, etc., compared with the equatorial Cordillera; the sixth shows the density of population, distribution of various races, etc. An extra map, as frontispiece, is an attempt to delineate Europe as a bas-relief.

In 1829 Denaix published an edition of this work at Paris under the title *Atlas Physique de l'Europe*. It will be observed that this epoch-making book laid down the lines upon which most work of the kind has since been done. In July, 1806, Ritter published in Guts-Muths' *Zeitschrift für Pädagogik* an essay of 20 pages, "Einige Bemerkungen über den methodischen Unterricht in der Geographie." In this essay Ritter describes the aim of geography to be "to make man acquainted with the scene of his labors in special and in general; hence it is a description not merely of the earth itself, but of the earth in relation to man. It is the bond of union between the world of nature and the world of man, inseparable from each, since it is the fundamental, necessary condition for the characterization of both." After enumerating the different classes of facts that constitute geography, he says: "The natural method is that which knows how to unite these different objects to a whole, which also, in harmony with the nature of the object, passes from the special to the general. It is that method which makes the child in the first place at home amid the realities that surround him and teaches him to see in the place of his abode."

Trained in this school, founded by Ritter and developed by Berghaus, Schouw, von Rongemont, von Roon, Ludde, and others, Guyot gave us, first in his *Earth and Man* and later in his geographies and wall maps, the results of the labors of European geographers joined to those of his own original and active mind. His wall maps and the maps of his text-books were (with the exception previously noted) the first to represent the earth's surface as it is. To-day the wall maps are unexcelled as a foundation for class instruction and the practice of map reading. Guyot's works were, in fact, the outcome of just such a stock taking of progress in geographical method antecedent to their days as the present series of papers propose to attempt for a later period.

It will be obvious that naturally the topics to be treated would fall under two divisions—such as relate to the subject-matter of geography as school science and such as relate to methods of teaching in the narrower sense. But it is impossible to draw a hard and fast line between such closely allied topics, and the discussion of one will often lead to incursions into the domain of the other. The chief subjects presented will be: Home geography (*Heimatkunde*), use of the wall map, map reading, representation (map drawing, reliefs, etc.), distribution of topics into courses, commercial geography, anthropography, means of illustration, onomatology, geographical museums, geographical chairs in universities.

*II. Home geography (Heimatkunde).*—That the study of geography should begin with the pupil's home is an educational commonplace oftener assented to than acted upon. In Germany, Austria, and Switzerland home geography receives a large share of the attention of teachers, and the essays, pamphlets, and books discussing its methods and details would form a small library. Ritter laid the foundations of home geography when, as quoted in the preceding paper, he said: "The natural method is that \* \* \* which makes the child in the first place at home amid the realities that surround his abode." The first efforts to carry out the idea were probably made in Pestalozzi's school at Yverdon. J. W. Henning, one of Pestalozzi's assistants, in his *Über die Methode beim geographischen Unterrichte*, Iffert, 1812,



a work in which he probably had the assistance of Ritter, lays down four courses of geographical instruction. He describes the first or elementary course as "a complete knowledge of the neighborhood," in which the pupil should lay the foundations for his future study of physical, political, and mathematical geography, and prescribes excursions in field and forest as the method of teaching. Later writers, as Wilhelm in his *Ideen ueber Geographie*, Lohse in his *Der methodische Unterricht in der Geographie*, Ziemann in his *Der geographische Unterricht*, and others, further developed the subject. But as the scientific concept of geography was then in its infancy, this earlier work in home geography naturally took a purely topographical direction, and after a few lessons on cardinal points, etc., proceeded at once to study the neighborhood as a political division.

The book that first worked out a course of home geography in harmony with the modern idea of geography was F. A. Finger's *Anweisung zum Unterrichte in der Heimatkunde*. First published in 1844, it appeared in a sixth edition in 1887. For Finger home geography is a preparation for the study of the earth. The "home" is the region that we can see, travel over on foot; the mountains, woods, and brooks that surround us; the clouds, sun, and stars of the heavens above us. "We do not make political divisions our limit; \* \* \* that would be an unnatural restriction." Finger bases his lessons on Weinheim, which is in Baden, but on the border looking into the beautiful Birkenan Valley, which is Hessian. "If the pupils point out to me the lovely beech forest northeast from Wagenberge, shall I say, 'Stop, children; that is Hessian'?" In answer to the question, What features of the home shall be studied? Finger replies that home geography is a preparation for the study of geography proper, and should consider such topics as will reappear in that study. "What does geography teach? Geography makes the pupils acquainted with the earth; it teaches its size and form; its motions on its own axis and around the sun; \* \* \* it teaches the distribution of land and water; it shows the separation into continents and oceans; it considers the position, size, boundaries, surface, climate, productions, inhabitants, etc., of each land. \* \* \* As aids, geography uses globes and maps, representations of things, not the things themselves; it also draws maps." All these topics have, as Finger shows, their type in the home. The following partial synopsis of the lessons in his "First step" for children between the ages of 6 and 8 will show how he works out this principle:

Schoolroom; things in the schoolroom; before, behind, right, left, above, below; first exercise in drawing (plan of schoolroom, of room at home); the sun and moon; rain, hail, thunder, lightning; garden; sunset; clouds; rainbow; shadows; schoolhouse; the sun moves to the right hand; the moon moves to the right hand; south; west; east; north; spring; southeast; stars, snow, ice, short days, winter; occupations of men, etc.

The second step reviews and expands these topics, adding new ones, such as rainbow, aurora, seasons, storms, and extends the map drawing beyond the school limits into the town. Finger points out that as soon as home geography has accomplished its end of laying the foundation for later study of geography and training to the use of maps, etc., its usefulness ceases. Its value lies in the fact that its subject-matter can be directly observed, described, and represented by the pupils. Any attempt to extend the course beyond what the pupil can see is a violation of the principles upon which home geography depends. Hence Finger protests against passing from the home to county, county to state (or their German equivalents), state to native land, and so on to the earth. "When home geography is completed, and before studying single countries, we pass to the earth as a whole." This view of Finger's was shared by Henning, who declares it to be absurd, almost impossible, and at variance with the order of development of the human mind and the nature of geography, "to lead the child from his birthplace as center in continually widening circles to a consciousness and building up of the idea of the earth."

Finger's *Anweisung* has a worthy companion in Matzat's *Methodik des geographischen Unterrichts*, published in 1885. This work covers the entire field of geographical teaching, and I shall have occasion to speak of it fully hereafter. It comprises two parts, an analytic and a synthetic. The analytic section lays down the principles of geographical method and consists of an empirical and a theoretical part. It will be readily seen that Matzat has a philosophical head. He belongs to the school of Herbart and Ziller, and though the first part of his book is by no means easy reading, it will repay any effort it may cost. In the synthetic division he marks out a complete geographical course, giving the lessons for each day of the year. The first thirty-eight lessons are given to home geography. Matzat makes a (to my mind) well-grounded distinction between home knowledge and geographical home knowledge (*Heimatkunde* und *geographische Heimatkunde*). His order of lesson is as follows:

Heaven and earth; horizon; vertical and horizontal; plan of schoolroom, 1:100 (metric measures); cardinal points; plan of school building and neighborhood, 1:1000 (metric measures); reduction of this plan to 1:10,000; measuring angles; plan of

school grounds, 1:10,000 (pace measures); elevations; profile of the school grounds, 1:10,000; representation of relief on the principle the steeper the darker the shading; reduction of plan to 1:100,000; map of neighborhood of school grounds, 1:1,000,000; relief model of neighborhood of school grounds; first wall map of neighborhood of school grounds; relief expressed by shading as above; movement of the sun from beginning of May to end of September; second wall map of neighborhood of school grounds, colored in flat tints, the higher the darker; profile through the neighborhood, 1:100,000.

It will be noticed that Matzat first develops the idea of the horizon as the visible limit of home geography, and then proceeds from the schoolhouse as center of horizon to study the neighborhood. This was the method of Dr. Friederich Kapp, as developed in his *Zeichnende Erdkunde* (Minden, 1837); the present writer has employed it for many years and finds it more satisfactory than any other. Matzat differs from Finger in following home geography by a study of the native country, combined with lessons on the constellations, further movements of the sun, etc.; then Germany, Europe, the earth as a sphere, the continents and the oceans, with lessons on equinox, solstice, day, hour, year, calendar, moon, pole, meridian, etc. This is partly due to the fact that in the school of which Matzat is principal the course in geography runs parallel with a course in history, the latter commencing with Germany.

E. Göpfert (*Ueber den Unterricht in der Heimatskunde*) proposes three successive courses in home geography: The first has for its object to obtain a geographical picture of the home as to position, size, relief, etc.; the second employs itself in comparing and grouping the facts already acquired; the third consists in a systematic study of the home in all its geographical features. Each of these courses would in turn form the introduction to a corresponding course in geography proper. In each the passage would be from the home directly to the earth as a whole. In the words of Göpfert, "With the ending of the course in home geography we step beyond the limits of sense apprehension and resort to representations, and among these the globe is undoubtedly the easiest to understand."

I have tried, in discussing the three works named above, to give some idea of the importance attached by European teachers of geography to home geography as a foundation for systematic geography and to indicate the general character of the work. As was remarked in the beginning, the literature of this subject would form a library in itself. The views set forth by advocates of the study of home geography may be summarized as follows:

1. In the terrestrial and celestial phenomena of the home region, types and analogies are to be sought for all the concepts that will be met with in advanced geographical study.

2. Hence the limits of home geography are determined by these prospective requirements of future work. As these include the relations of the earth to the sun, etc. (mathematical geography, so called), form, relief, hydrography, and other features of physical structure, organic life, man, etc., all these must find their beginnings and fundamental concepts in home geography.

3. The study of the geographical aspects of the home is obviously primarily a study of its physical features; hence to proceed by political divisions, township, county, etc., is to violate the fundamental idea of home geography.

4. A leading purpose of home geography is to train the pupil to map reading by establishing a relation between geographical elements and their representation.

5. Each grade of geographical teaching (primary, grammar, high-school) should have its preparatory course in home geography.

6. Home geography once completed, the next step is to the globe as a representation of the earth. When the limits of the pupil's field of observation is reached, the work of home geography is completed.

7. The order of teaching may be stated as follows: First, the pupil is led to observe the geographical fact. Second, he is led to describe it. Third, he is taught to represent it. This order is true of all geographical work, and is not restricted to home geography.

NOTE.—German spelling varies between "*Heimatskunde*" and "*Heimatkunde*"—the latter is the more modern form, but in quoting titles I have always used the author's spelling. Strictly speaking, "*Heimatkunde*" means home knowledge, but is interpreted by the majority to mean home geography. Some writers, however, give it the broader signification, and include all the facts of the home in their lessons. Hence the distinction quoted above from Matzat between a general home knowledge, including all facts of the home, zoological, botanical, historical, etc., and a geographical home knowledge forming a special preparation for future geographical work. In this case general home knowledge would be the work of the first and second school years. Geographical home knowledge would commence in the third school year. The question whether work in home geography should begin



in the first or in the third school year, often quite sharply discussed, is really a question of the meaning attached to the word.

*III. The wall map as the foundation of geographical teaching.*—The pupil, having completed his course in home geography, is assumed to have acquired the power to read maps. Hence the success of his after course depends mainly upon the thoroughness of this elementary work. He has passed beyond the limits of direct personal observation and must henceforth depend upon the observations of others, recorded in maps and books, to increase his stock of knowledge. Since all classes of geographical facts can be represented on maps, and since one map may record the results reached by many explorers and investigators, it follows that the study of the map must occupy a chief place in geographical teaching. This is a point repeatedly insisted upon by German and Swiss writers upon methods in geography. Expressions such as the following are of frequent occurrence:

"The map, the truest representation of the earth's surface, in which explorers have recorded their experiences, is the chief means of geographical instruction." "We must see to it that the pupil gives his interpretation to the cartographic signs; that he reads into and out of the map the correct geographical relations. Map reading is the foundation of geographical instruction in the second grade of work. It was prepared for in the first grade (home geography); here it will be broadened and deepened."

An excellent little manual (Ptaschnik's *Leitfaden beim Lesen der geographischen Karten*) recognizes this idea in its title, and Geister's *Atlas für die Heimatskunde der Schweiz* is an example of its complete realization. In its twelve maps the pupils of the Swiss schools can read an answer to any question respecting their native land.

Good instruction in geography from this point of view will not consist in looking up answers to "map questions"—in memorizing a mass of descriptive text, in pointing out places upon a so-called "outline map"—but in a well-ordered reading from the map under the teacher's guidance, and in after work in fixing and defining the knowledge thus obtained. Such a course implies the use of two kinds of maps—the wall map, from which, with the teacher's help, the pupil reads the main points of his lesson; the hand map of his atlas or geography, in which he reviews and makes his own the ideas presented in the lesson. It further implies the division of the lesson hour into two parts—the first half devoted to a reproduction of the lesson of the preceding day, the second half to teaching a new lesson. These lessons are not assigned; they are taught; and the pupil carries away from the classroom an imperishable geographical picture of the region studied—a picture which he has himself read from the map, and to enlarge and complete which he needs only more complete maps. The wall map, then, is the foundation of geographical teaching, the hand map its adjunct. The class work is centered upon the wall map, the pupil's individual work upon the hand map.

In the paper on home geography it was stated that there are three steps in each lesson in geography—observation, description, and representation—and that this order of teaching is not confined to the work in home geography, but applies to every grade. It will be readily seen that the wall map takes the place of the home as a field of observation; that in both cases the pupil describes what he has observed and in like manner represents it. Of this last in connection with reading from the wall map I shall have something to say in a future article, and will at present attend exclusively to the work of observing and describing. This will be best understood from an actual example, which, however, will mainly show the results rather than the process of map reading. Intelligent teachers will readily understand that nothing is to be told the pupil which he can see for himself, and that, while at first he may be assisted in the verbal expression of the results, he must be gradually trained to self-dependence in this matter.

Let us suppose that the lesson is the relief map of continental Europe. In some previous lesson the pupil has read from the wall map the triangular form of the continental mass of Europe and has noted its west, east, southwest, and southeast angles. It is to the relief of this continental triangle that his attention is now directed. Something like the following will be the result—it being assumed that the pupil understands the way in which highlands, lowlands, etc., are represented on the map:

TEACHER. Look at the map and tell me in what part of continental Europe you find the lowland represented, in what part the highland.

PUPIL. The lowland is in the northeast. The highland is in the southwest.

T. Look at the map again and tell me if it is all lowland in the northeast.

P. Some small highlands are represented there.

T. Is the southwest all highlands?

P. There are some small lowlands in different parts of the highlands.

T. State what you have learned from the map.

P. Northeast continental Europe is mostly lowland. Southeast continental Europe is mostly highland.



T. In what direction must I draw a line to separate the lowland from the highland?

P. From northwest to southeast.

T. Someone may point to the northwest part of the highland. What river has its mouth just above it?

P. The Rhine.

T. Someone may point to the southeast part of the highland. What river's mouth just above it?

P. The Danube.

T. Between what points, then, may my line dividing the lowland from the highland extend?

P. From the mouth of the Rhine River southeast to the mouth of the Danube River.

T. This line is called the mountain diagonal of Europe. You may state how the lowland part of continental Europe is divided from the highland part.

P. Lowland continental Europe is separated from highland continental Europe by the mountain diagonal, a line drawn from the mouth of the Rhine River to the mouth of the Danube River. Northeast of this line the surface is mostly lowland; southwest mostly highland.

T. We will now attend to the highland part of continental Europe. In what direction must I draw a line from the northwest end of the mountain diagonal to clear the highland on its west side?

P. Southwest.

T. In what direction to reach the southeast end of the mountain diagonal?

P. East.

T. What, then, is the form of highland continental Europe? What are its bounding lines?

P. Highland continental Europe has the form of a triangle, its bounding lines being the mountain diagonal on the northeast side, a line drawn southwest from the Rhine River mouth on the northwest side, and a line drawn east to the Danube River mouth on the south side.

T. Look at the map and tell me which part of the highland is the highest.

P. The south.

T. Of what does this highest part consist?

P. Mountain chains.

T. What name do you give to several mountain chains extending in one general direction?

P. A mountain system.

T. This mountain system is called the Alps. You may state what you have learned about the south part of the highland.

P. The highest part of the highland of continental Europe is in the south. It consists of many mountain chains forming the mountain system of the Alps.

T. Look at the map and tell me how you see the rest of the highland represented.

P. Broad spaces bounded by mountain chains.

T. These broad spaces are plateaus and elevated river basins. How do they compare with the Alps as to height?

P. They are lower.

T. In what direction do they lie from the Alps?

P. West, north, and east.

T. You told me that there were several small lowlands in different parts of the highland. See if there are any of these between the Alps and the plateaus and river basins and to what rivers they belong.

P. There is one southwest of the Alps and another in the east. The southwest lowland belongs to the Rhine, the east lowland to the Danube.

T. Look at the plateau region north of the central part of the Alps and see whether it is joined to or separated from them.

P. It is joined to the Alps.

T. This region of plateaus, elevated river basins, and mountains is called the middle mountain and plateau system of Europe. The word "middle" has reference to its elevation, which is not so high as the Alps and not so low as some other mountains, etc., of continental Europe which lie outside this region. You may state what you have learned about this part of the highland.

P. A region of plateaus, elevated river basins, and mountains lies west, north, and east of the Alps. It is called the middle mountain and plateau system of Europe. It is separated from the Alps in the west by the valley of the Rhone River, in the east by the valley of the Danube River, and is joined to the Alps in the center on their north side.

This may suffice as an example of the method pursued. The next step would be a more detailed study first of the Alps and then of the plateau region—the amount

of detail and the method of presentation being governed by the grade of pupils instructed. A summary of the results of an exercise in reading the contour of Farther India will furnish an example of more specialized work. It is taken from an article by Director Heiland, of the Weimar Seminary:

"Farther India has the form of a triangle; its base line is the Tropic of Cancer, between  $90^{\circ}$  and  $110^{\circ}$  east longitude from Greenwich, or between the Ganges-Brahmaputra Delta and the meridian of Hainan Island. The vertex is Cape Buro in  $14^{\circ}$  north latitude, on the same meridian as Cape Tchelnjnskin, the northernmost point of Asia. Base is to height as 3 to 4. Length from north to south is  $23\frac{1}{2}^{\circ}$ — $11^{\circ}$   $\times$  60 (geographical miles). Length of base is  $110^{\circ}$ — $90^{\circ}$   $\times$  55 (geographical miles). Direction of west coast is from northwest to southeast, interrupted by the Gulf of Martalan. It has three natural divisions: (1) from Brahmaputra-Ganges Delta to the Irrawaddi; (2) to the angle of Malacca; (3) to Cape Buro. Direction of 1 and 3 west-northwest to south-southeast—of 2 north to south. Lengths equal."

The reader must bear in mind that each of these examples is taken from parts of a course that imply much previous work upon other countries and instruction in terminology, modes of representation upon the wall map, etc. Further, this work in reading and describing would be accompanied by corresponding work in representing both by teacher and pupil—omitted here, since it will be fully treated in a special article.

Such work implies good wall maps. Good wall maps are maps that represent the surface of a country as it is—its highlands and lowlands, plateaus, mountains, etc. Maps giving political divisions only, with a few indications of mountain chains but with no delineation of highlands and lowlands, are absolutely worthless for any intelligent work in geography. When the pupil was working in home geography he saw before him a collection of natural features, elevations and depressions—plains, hills, and valleys. He first of all studied the physical features of his home and traced the political divisions within the lines given by these physical features. Why, when he comes to study the map as a means of acquiring geographical knowledge, should this be reversed?

The writer pursues the course above described in his classes in the Michigan State normal school. Every topic—climate, vegetation, commercial relations—is studied in the same way, the basis being the excellent wall maps of Professor Guyot, supplemented by Von Haardt's *Karte der Alpen* and similar aids. He hopes at some future time to add to his tools the wall relief maps now used in some of the best European schools, of which more in a future article on relief work. He would not willingly adopt any other method of teaching geography than the method of map reading from the wall map. I can not close this article better than in the words of Director Heiland, whose lesson on Farther India was quoted above:

"The wall map is the foundation of the work. This place belongs to it as the relatively best means of geographical instruction. This corresponds to what is the established method in instruction in home geography, in natural science, in drawing. Certain fundamental geographical concepts can be formed only by a direct study of the map. The wall map should further form the foundation of this work because the self-activity of the pupil is thereby most surely promoted. Only when map reading forms the beginning and center of the study of country, and when the pupil by the exercise of his own powers masters the material presented in the map, can this be reached. But it must not be forgotten that where previous instruction in home geography has not made the pupil skilled in understanding the symbols of a map and has not established a close and living relation between the representation and the object represented, geographical teaching plays on an instrument without strings."

*IV. Map reading.*—One of the most prominent features in recent European discussions of geographical methods is an insistence upon the importance of map reading as the foundation of all good work in teaching geography. This topic has already been touched upon in the papers on home geography and use of the wall map, but its great importance will perhaps warrant a more detailed treatment. The principle of map reading is involved in Froebel's statement that man develops himself by making the external internal and the internal external. The pupil in the study of home geography has made the characteristics of the external features of his neighborhood the basis for mental pictures of them, and has associated with these internal concepts the mode of representing them. He must now reverse the process, must read into the wall and the hand map these concepts, and by describing and representing what he finds there delineated give them external presentation. "Knowledge of the map," says an anonymous writer in a German educational journal, "is the most important thing in geographical teaching. Hence systematic map reading must be pursued from the very beginning. \* \* \* The pupil should study the map intelligently and should translate its signs into the forms for which they stand, so that the map will, as it were, describe to him and paint for him vivid pictures of



the earth. The map is an unknown region of the earth in which the pupil makes discoveries. In spirit he takes ship and traverses the oceans; he lands and explores the continents; discovers the bays, peninsulas, islands; crosses plains and deserts; climbs the mountains, and penetrates their passes and valleys."

So H. Funk, in his Ueber die Anschaulichkeit des geographischen Unterrichtes mit besonderer Berücksichtigung des Kartenlesens, says: "The teacher must base his instruction upon the map. Whatever the pupil can find for himself by attentive consideration of the map should not be told him." J. S. Gerster, in his Geographie der Gegenwart, says: "Geographical instruction has especially to provide for developing the self-activity of the pupil. This is accomplished by diligent map reading on the pupil's part. Let the teacher dispense with the text-book, rely wholly upon the map, and lead the pupil to discover the fundamental physical features of each country for himself. Such a course habituates the pupil to independent research and compels him always to think while studying the map."

Prof. H. Wagner, in his address before the second German Geographical Congress, declared that "the intensive study of the map is the central point of all geographical teachings." E. H. Oberländer, of the Grimma Teachers' Seminary, in his Der geographische Unterricht nach den Grundsätzen der Ritter'schen Schule, writes: "What the pupil can himself read from the map and what he can infer from a study of it the teacher should not tell him. He must rather by his questions lead the pupil to express his knowledge. Through analytical questions the teacher must guide the pupil to describe, upon the basis of the map, the horizontal and the vertical forms of a land, its hydrography and its topography. Through developing questions he should lead him to determine the climate, productions, etc., as a result of the natural features." Matzat, in a passage too long for quotation, says in substance that the study of regions outside the home begins when the pupil has acquired the power to read maps. The process consists in the pupil's studying the geographical objects on wall and hand map and framing his own descriptions of them. The description is at first guided by the teacher's questions, but as the pupil learns the what and the how of map reading he must be required to work more and more independently. The verbal expression is a sign for the teacher that the pupil has the geographical concept in his mind, a still further and more positive proof being the power to represent what has been observed and described.

It has been my aim in the foregoing quotations to indicate the lines upon which good work in map reading must proceed. An attempt will now be made to apply these ideas to a concrete example—North America. It is premised that a good wall map hangs in view of the class, a map which by either drawing or coloring shows not only topography and hydrography but also the distribution of highlands and lowlands, and the altitude and character of mountains. Any map that does not do this has no place in the schoolroom. It may have its uses as a reference map for ascertaining the location of towns, boundaries, railroads, etc., but as a foundation for the study of geography it is not merely valueless—it is positively injurious. The pupils have before them the corresponding hand map of their atlases or geographies. These equally with the wall map should show the physical features. German and Swiss school children have an advantage over their American compeers in the fact that not only do good atlases published independently from text-books abound, but the maps composing them can be separately purchased; hence, the best map for the purpose in view can always be used. Guyot's may be cited as fulfilling the requirements of a good wall map; Appleton's and the Eclectic, among others, of good hand maps. Under the conditions stated let us proceed to read the map of North America.

1. *Explanation of map.*—What it represents. Origin of name America. Why North America? (Refer to globe, which should be present at every lesson, for answer to this question and the two following:) In which hemisphere, reckoned from the equator? In which from meridian of Ferro?

2. *Projection lines.*—In what direction do the parallels of latitude curve? How, then, must east and west be determined? Find meridian of  $97^{\circ}$  west from Greenwich or  $20^{\circ}$  west from Washington. In what direction does it extend? In what direction the meridian west of it? East of it? What rule must we observe in judging of directions north, south? What angle does the meridian of  $97^{\circ}$  west from Greenwich make with the parallels of latitude? Why are the parallels drawn in curved lines?

3. *Position.*—(a) *Relative position.* Position of home found on map of North America and on globe. Pupils mark this position with a small cross upon their hand maps. Find the most northern point of North America. How far from the home? Measure with scale of miles. How many degrees between the home and this point? Proceed similarly with south, west, and east points of North America.

(b) *Absolute position.*—Latitude and longitude of north point of North America (Boothia Peninsula). What parallel runs south of it ( $70^{\circ}$  N.)? What parallel north of it ( $80^{\circ}$  N.)? Take the space between  $70^{\circ}$  N. and north point of Boothia with dividers or on a strip of paper and see how many times it is contained between



70° N. and 80° N. (about five times). How many degrees, then, is north point of Boothia north of parallel of 70° N.? (Two degrees.) What, then, is the latitude of the most northern point of North America? (72° N. Lat.) Proceed similarly with longitude. Repeat with south, west, and east points of North America.

4. *Boundaries*.—This needs no illustration.

5. *Coast line*.—Find the strait that joins the Arctic Ocean to the Pacific Ocean. Name? Find the most easterly point of North America. Name? Direction of coast from Bering Strait to Belle Isle Strait? Length measured with scale of miles. Starting from Bering Strait what do we first pass? (A bay.) Name? (Kotzebue Sound.) What next? (A cape.) Name? (Lisburne.) Next? (A cape.) Name? (Barrow.) Next? (A river mouth, Colville; another river mouth, Mackenzie.) A cape (Bathurst). A strait (Union). A bay (Coronation). A river mouth (Coppermine), etc. Treat remaining coasts in same manner.

6. *Form*.—How many oceans bound North America? How long is its northeast coast? How wide at its most southern part? (Runs to a point.) What form, then, has North America? (Triangular.)

This triangular form is sometimes called the stem or trunk of the continent; the peninsulas and islands the branches. What shape is the continental stem of North America?

7. *Peninsulas*.—Read from map in same order as coast.

8. *Islands*.—What body of water lies north of North America and west of 97° W. from Greenwich? (Melville Sound.) How many straits lead out of it? Name them; first south, then west, north, east. What is this sound surrounded by? (Islands.) How many? Name them, beginning west of McClintock Channel and passing north-east and south. Other islands treated in a similar manner. If more islands are named than the teacher thinks it desirable to have learned, he will indicate upon the wall map those that he wishes to be remembered.

9. *Dimensions*.—Measure on map length of each side of triangular form. Compute area of triangle by known rule. Compare with area given in book. Whence the difference (allowances made for projections and indentations)? Measure length of North America on 97° W. from Greenwich; on 87° W; on 107° W.; from Bering Strait to Isthmus of Panama, from Strait of Belle Isle to Cape St. Lucas. Width on 50° N.; on 70° N.; on 40° N.; on 30° N.; on 10° N.; from Cape Hatteras to San Francisco Bay; from Delaware Bay to Cape Mendocino; Strait of Belle Isle to Gulf of Georgia. How long would it take a train traveling 40 miles an hour to pass over each of these distances?

10. *Relief*.—Teacher explains that the green coloring indicates lowland—the lighter the color, the higher the land. The buff color indicates highland. White, the region of perpetual snow. (In recent German maps brown tints are used throughout—the darker, the higher. On the whole this is to be preferred.) Meanings of terms “lowland” and “highland.” What parts of North America show lowland? What parts highland? How many lowlands do you see? Names given as “lowland Mackenzie River,” “Hudson Bay lowland,” etc. How many highlands? Names given as “Arctic highland,” “western highland,” “eastern highland.” What connects eastern and western highland? (Highland north of St. Lawrence system.) Name given. What connects Laurentian heights with Arctic highland? The distribution of highlands and lowlands being studied, a special study is made of each. The eastern highland may serve as an example. Direction (southwest to northeast.) Position of southwest extremity; of northeast. Of what composed? (Mountains in center, plateaus western, terraces eastern.) Name of the mountains. River valleys within the system. Name rivers in longitudinal valleys. What transverse valleys? In the western highland attention would be called to the arrangement of the mountains on its west side, diverging to include the valleys of Sacramento and San Joaquin—uniting at Mount Shasta and again diverging. In the Rocky Mountain system the difference in character between its southern, central, and northern portions would be noted. So also the plateau region between the Rocky and Coast systems and the Great Plains east of the Rockies. Similarly the highlands of Central America and of Mexico would be noted as divisions of the western highland, to be more fully studied when those countries were taken up. It will be noted that the features of relief that belong together are studied together. Thus not all the mountains of North America first, and then all the valleys and next the plateaus, but rather first the distribution of highlands and lowlands, next each of these separately; but in each studying together features that belong together in nature. Thus in Asia, after tracing the disposition of lowlands and highlands, we might take up the special study of the great central highland. Its extent from the Mediterranean to the Pacific would first be noted; its increase in width from west to east; the contraction to the vicinity of 75° E. and 35° N., forming two divisions, eastern and western. Next we might take the eastern highland; study its extent east and west, north and south; its nearly triangular form; note and describe the mountains of its northern, eastern,

and southern margins; the mountains crossing its interior and the divisions (as Soongaria, Thibet, etc.) thus originating. Then, if desirable (as would be the case say with the Himalaya Mountains), special study would be made of each of these bordering mountains, divisions, etc.

So again, if the topic were that part of the central European highland lying north of the Alps and between the Rhine and the March, first would be noted the existence of three divisions meeting in the Fichtel Mountains—the Swiss-Bavarian plateau, the Franconian basin, and the Bohemian basin. Next each in turn would be studied as to position, form, boundary, mountains, rivers, etc.

In brief, the object in view is to develop in the pupil's mind a picture of the country studied that will never leave him, and a sense of the interdependence of related geographical features.

How this observation and description of the contents of a map is to be accompanied by representation of the things observed and described will be discussed in the next paper. For the present the statement that map drawing is a necessary accompaniment of map reading must suffice. I will in closing call attention to the fact that the work so far is analytical—we have merely determined the contents of the map. The next topic, hydrography, will furnish an opportunity for showing how developing questions may bring out ideas of the relations existing between different classes of geographical phenomena.

*11. Hydrography.*—Our reading of the coast has made us acquainted with the position of the mouths of leading rivers; hence, this will be our starting point for the study of hydrography. Questioning should be first directed to fixing the great drainage areas in the pupil's mind.

What rivers have their mouths between Bering Strait and Belle Isle Strait? Into what ocean do they discharge? Proceed in the same manner with remaining coasts. Into how many and what oceans do the rivers of North America flow? We will first study the rivers flowing into the Arctic Ocean or into any of its bays, gulfs, etc. Find the mouth of the Mackenzie River. Follow it till first tributary is reached. In what direction do we go? (Southeast.) Name of first tributary? (Waters of Great Bear Lake from east, through river not named.) In what direction from this point? (Southeast.) Tributary? (Dease River.) What body of water do we reach? (Great Slave Lake.) In what direction now? (Nearly south.) Some pupils raise hands here and state that the river is no longer called the Mackenzie, but the Slave River. The Slave River is traced in Athabasca Lake and the tributary, Peace River, noted from Athabasca Lake, south and southwest to Mount Hooker, under name of Athabasca River. Pupils now describe the river from source to mouth. In the same way two or three leading rivers should be read at each lesson, and the remaining rivers to be studied on the same plan indicated. The teacher thus reduces the amount to be learned within the limits he deems fit, no matter how much detail the map studied may contain.

The process described above fixes the location of drainage areas, and traces them back to the relief of the land. The next step should connect relief with hydrography as a determining cause. Into what ocean do most of the rivers of North America discharge directly or through bays, gulfs, etc.? (Atlantic.) On which side of North America is the greatest elevation of its surface? (West.) In what direction is, then, its largest slope? (To the Atlantic.) Why do most of its rivers flow into the Atlantic? Similarly trace the influence of the western highland upon the drainage to the Pacific, of the Appalachian highland in directing the Mississippi drainage to the Gulf of Mexico, the St. Lawrence to the northeast, and upon the formation of the Atlantic slope.

The pupils, being supposed to know the distinction between upper, middle, and low course of rivers, should be questioned upon the relation of this feature to relief. Taking first the Atlantic slope, lead them to see that since the eastern part of the Appalachian highland consists in succession of mountains, terrace, and lowland, the three divisions are found fully developed in its rivers. Taking next the Mississippi, show that the larger part of its course being through a lowland tends to reduce the middle course in length. Again show the relation between longest slope and longest rivers; how the rivers of North America exceed in length and area drained those of the Old World as a consequence of the predominance of lowlands; how this length of course through lowland limits their fall and rate of current. Ask the pupils to describe a few of the rivers of northern North America east of the western highland, and a few of southern North America. Then question them upon their differences to show that down to and including the St. Lawrence they are outlets of chains of lakes, and below this mainly large streams with numerous branches.

*12. Climate.*—Pupils are supposed to know the distinction between continental and oceanic climates, and between tropical, subtropical, temperate, steppe, and desert climates. Between what two parallels of latitude does North America lie? What line crosses southern North America? Northern North America? Through how



many zones does North America extend? Northern zone? Southern zone? Central zone? Compare as to temperature.

Make plain to pupils that this is a division into so-called mathematical climate, and takes account mainly of the position of different parts of North America in regard to the direction of the sun's rays. This climate will be further modified by the relief of North America. In what direction does the highest line of elevation cross North America? (From north to south.) In what direction the greatest lowland? (North to south.) In which half of North America is the greatest highland? In which the greatest lowland? Upon what part of the map is the white placed, showing where snow remains during the year? Which, then, is the colder, the great highland or the great lowland? Which half of North America has the largest and most bays and gulfs? Into which half does the ocean extend farthest? What climate will the east half of North America have? (Oceanic.)

In a similar manner it should be shown how this results from the lower east half lying open to moist winds from the Atlantic; how the latitude of the lands north of the Gulf of Mexico, and their accessibility to moist winds from the Gulf, gives them a subtropical climate with summer rains. Nearly all the later geographies contain physical maps upon which the line of northern limit of trees, etc., is drawn. This may be used to point the contrast in temperature between the east and west coasts. Similarly the continental character of the western half of North America east of the Pacific region should be inferred from the relation of the line of greatest elevation to the moist winds of the Pacific. So also the subtropical climate of California, the steppe climate of the prairie region, etc. If the map gives the ocean currents these will aid in reading the climate. Again, a relation may be traced between the contrast of east and west in climate and the like contrast in hydrography—between the absence of east and west lines of elevation and the comparatively gradual change of climate from north to south. If the pupil has learned in the primary grade (as he should) some elementary facts about the climate of Europe, a few comparisons of latitude in North America and in Europe may be combined with this knowledge to point out the cooler character of the climate of North America, which may then be traced to the wider extension of that continent toward the north, the absence of marginal mountains to protect it from arctic winds, the course of the Gulf Stream, etc.

13. *Vegetation.*—A majority of our best geographies give upon their physical maps the line of limit of trees, etc., in the same manner as the best German maps, and indicate the localities of leading varieties of vegetation. When studying the vegetation of the entire earth the grouping into zones and regions, as of palm and banana, needle-leaved evergreens, etc., has an advantage in giving broad general views. In the study of the grand divisions, however, the grouping by natural province brings vegetation into closer relation in relief, hydrography, and climate. The classification given by Professor Griesbach in his *Vegetation der Erde* is adopted by the leading German geographies and will form the basis of the present illustration.

Calling attention to the line of northern limit of trees, question the pupils as to its direction and consequent difference of position on east and west coasts. They will easily be led to see that the region north of this line is treeless, and that it is appropriately named Arctic province. They will then read from their maps the characteristic vegetation of this province. Appropriate questioning will show the influence of the Rocky Mountains in carrying the tree line northward in the northwest, and of the deep inlets from the Arctic Ocean in correspondingly depressing it farther east. By commencing on the Pacific Coast and noting the enumeration of trees upon the map the limits of the North American forest province may be readily traced—its southern limit north of the steppe region of the Great Plain; its southward extension toward the Gulf on the Atlantic side of North America; the specific trees which characterize its western, eastern, and southeastern portions; the connection between its position and relief, hydrography, and climate. So, also, the steppe province of the prairies, the subtropical Californian province so similar to the Mediterranean province in Europe, the Mexican, West Indian, etc. The limits of this paper preclude fuller detail, but teachers will readily see how the German idea of reading from the map and of not telling the pupil anything that he can find out for himself is to be carried out. It may be noted that the vegetation of a country and its vegetable products are different matters, and that as regards the vegetation of our own country valuable aid may be obtained from volume 9 of the census report, epitomized with a good map in Petermann's *Mittheilungen*, No. VIII, 1886.

14. *Animals*—Should be treated similarly to vegetation, and may be grouped according to the climatic regions and provinces of vegetation.

15. *Inhabitants.*—In Gerster's *Atlas of Switzerland*, described in an earlier paper, two maps, one showing the parts occupied by French, Germans, and Italians, and another showing the density of population, furnish a basis for an exercise in map reading under this topic and for tracing a relation between the facts delineated and the physical structure of the country. The ethnographical map of Europe,



found in the best German school atlases, enables the pupil to see how two lines, radiating from Trieste, will follow the line of division between the three dominant European races—Romanic, Germanic, and Slavonic—to distinguish the Alps as a common meeting ground of the races and other similar facts. Our American geographies do not furnish us this aid, and it is hence necessary to teach facts under this topic as matters of information, unless teachers, with the aid of the census reports, will prepare rough wall maps for this purpose. In a following paper on graphic work in geography an attempt will be made to show the German and Swiss method of training pupils to translate the statistics given under the topic "Population" into visible speech on blank maps, thus reading the facts into instead of out of the map.

Passing some other topics, such as products, industries, etc., with the statement that with suitable maps they would be best taught by map reading, I will close this paper with an illustration of map reading, applied to the study of the cities upon the Atlantic Slope of the United States.

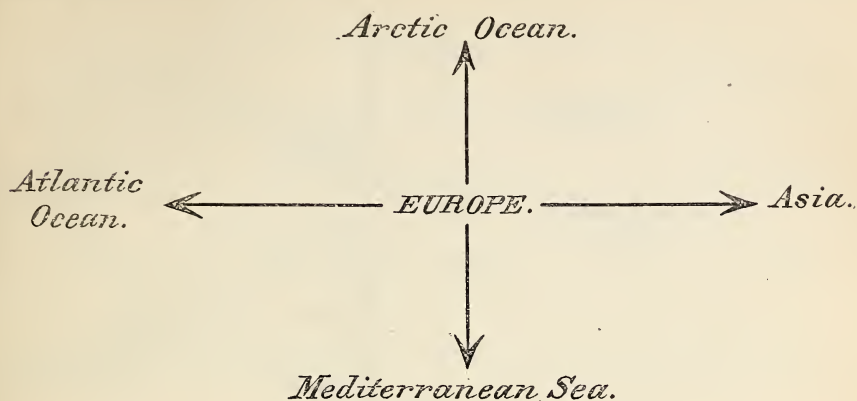
The lesson would be opened by questions reviewing the relief of the region and directing the pupil's attention to its three divisions—mountains, terrace, and lowland. The teacher would then point to such of the cities along the east foot of the mountains as he wished learned, the pupils finding them on their hand maps, naming them, and if any are upon rivers, noting and naming the rivers. A similar course would be followed with the cities near the eastern margin of the terrace and with those upon the coast. The gradual approach of the mountains to the coast as the north is approached, and the consequent decrease in width of terrace and lowland would be noted. The facts being thus read from the map, the connection of this position of cities in three lines related to the three lines of relief would be brought out. Questions as to the probable mode of transporting goods in mountain and comparatively level country, respectively, would lead to change of transportation being assigned as a probable reason of the location of cities at the mountain foot. Questions as to the effect upon river currents of the passage over the edge of the terrace, the formation of water power, and the navigability by large craft carrying more goods to the streams below the terrace would point to some of the causes determining the location of the second line of cities, while the coast cities are obviously at the seat of change from land and river to ocean carriage. None of these relations would be told to the pupil; he must be led by the teacher's questions to discover them for himself.

It has not been my purpose to make a complete geographical study of North America, but to present such illustrations as would show clearly the spirit and method of the map reading so much insisted upon by European writers upon geographical teaching. That it develops the self-activity of the pupil seems evident; equally plain is it that the method requires teaching rather than lesson setting and lesson hearing. Undoubtedly it requires hard work from both teacher and pupil; undoubtedly it will take more time than memorizing and repeating the words of a printed text. It is not, however, in the material world only that a constant relation exists between power applied and work accomplished.

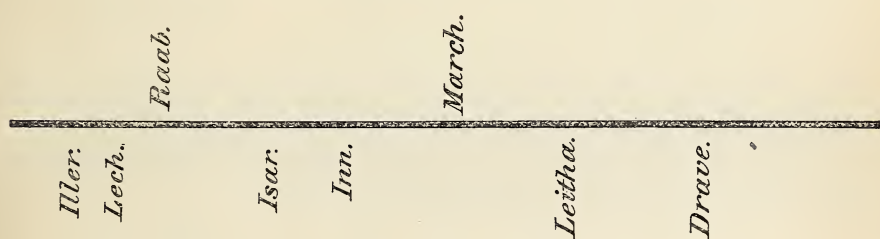
*V. Graphic work.*—In the summary of work in home geography it is stated that in all geographical work there are three steps—observation, description, representation. I have ventured to include under the term "graphic work" a variety of processes which, while differing considerably among themselves, have the carrying out of the third step—representation—as their common aim.

To use a much-abused term, map reading may be described as a process of analysis. The pupil sees the map as a whole, and step by step analyzes it into its constituent elements. The description of the results thus obtained is to a certain extent a process of synthesis. But if the pupil goes a step farther and represents what he has observed and described the process is complete; he associates the various matters of detail so as to form a connected picture of the region studied. Naturally map drawing is one of the very obvious directions taken by this work of representation, but it is by no means the only form that it assumes. The various geographical elements that admit of representation may, perhaps, be roughly classified as position, magnitude, and form, using these terms in a very broad sense. In map drawing all three are obviously more or less dealt with, but some German geographers—more especially Matzat, Kirchhoff, Coordes, and Kühne—have recently employed methods of representing position and magnitude which would seem to be worthy of consideration and adoption by American teachers. It is the purpose of the present paper to speak of these, reserving for later treatment map drawing proper and relief work. And, first, as to position. One of the simplest forms of this, suitable for use with quite young pupils, is to write the names of the geographical objects in their

true relative positions. Thus, if the boundaries of Europe have been studied they may be represented thus:



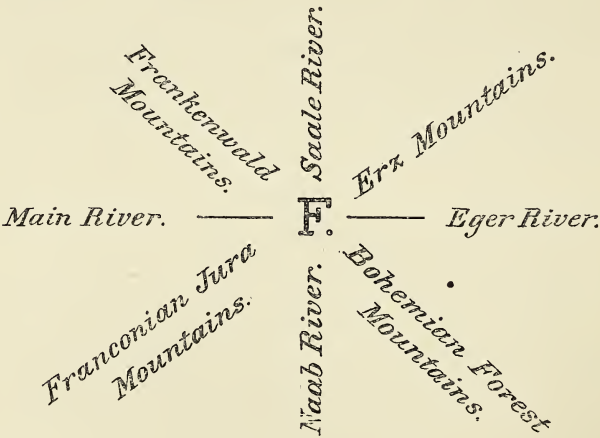
In a more advanced class, where greater detail is required, as, for instance, the seas—North Sea, Sea of Marmora, Black Sea, etc.—a similar plan would be followed. As an example may be taken a representation of the positions of the tributaries of the Danube within the limits of Germany:



A similar one of the Rhine would be as follows, adding to the Rhine tributaries their tributaries, and indicating by l. or r. their position on left or on right bank:



The central point of the middle mountains of Germany is formed by the Fichtel Mountains, which may also be considered as the meeting point of the plateau system of Central Europe north of the Alps—the Swiss-Bavarian Plateau, the Franconian Basin, and the Bohemian Basin. In the Fichtel Mountains four other ranges nearly meet and four rivers take their rise. If we represent the Fichtel by F, the following scheme will represent this important geographical relation:





If the topic studied has been the west, south, and east coasts of England, the result may be thus represented:

<i>West Coast.</i>		<i>East Coast.</i>
Cumberland.	.	North England.
<i>Liverpool Basin.</i>		<i>The Wash.</i>
Wales.	Central England.	East Anglia.
<i>Bristol Channel.</i>		<i>The Nore.</i>
Cornwall and Devon.	South England.	Kent.
	<i>English Channel.</i>	

Similarly, the division of Scotland into three parts by the firths and the Caledonian Canal may be represented:

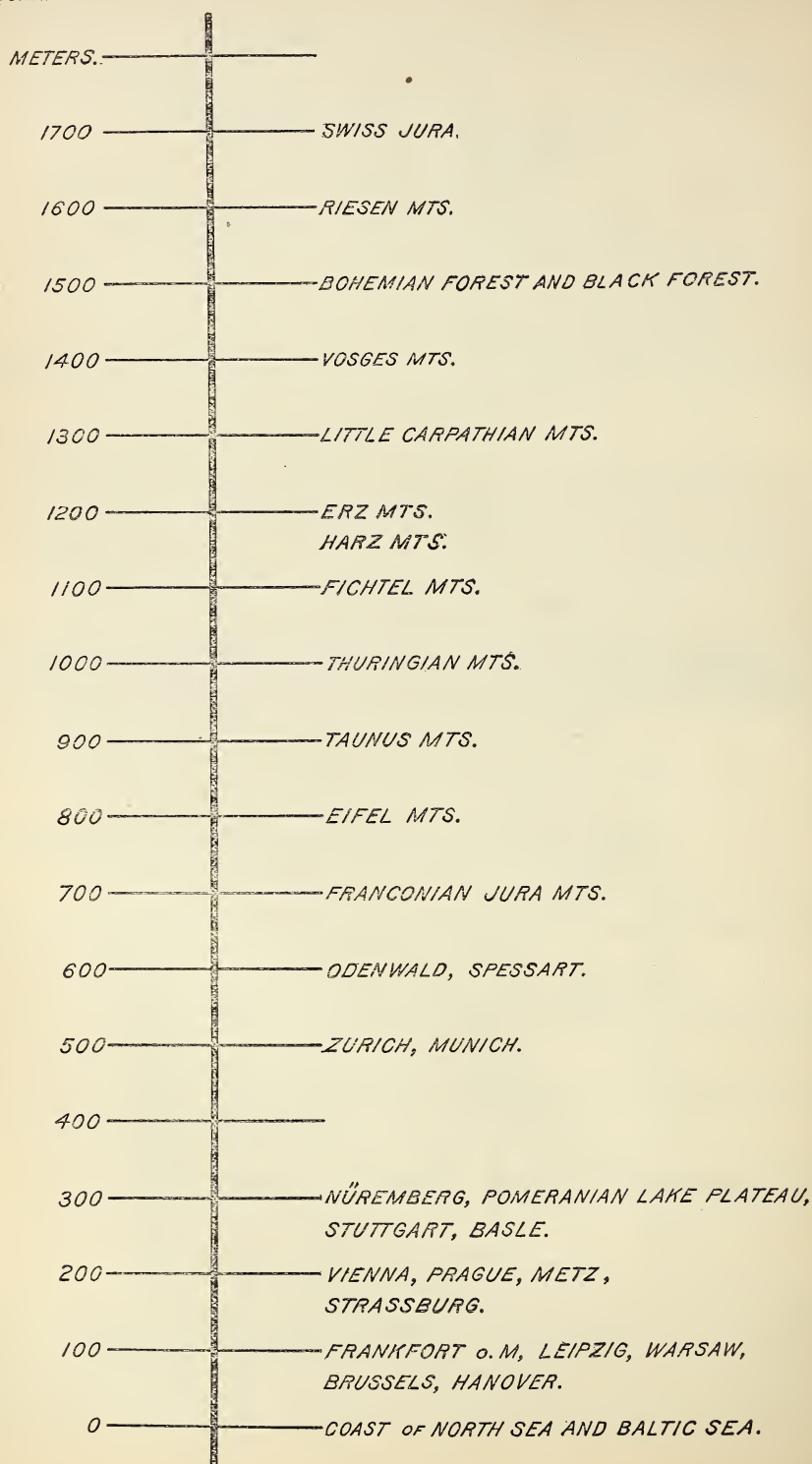
	North Scotland.	
<i>Caledonian Canal.</i>		<i>Moray Firth.</i>
	Central Scotland.	
<i>Firth of Clyde.</i>		<i>Firth of Forth.</i>
	South Scotland.	

In a Prussian school the pupils have studied the relative positions of the twelve Prussian provinces just as American children would study the positions of the States. Representing each province by a square, the following would be a record of the result:

	SCHLESWIG-HOLSTEIN.	POMERANIA.	WEST PRUSSIA.	EAST PRUSSIA.
WESTPHALIA.	HANOVER.	BRANDENBURG.	POSEN.	
RHINELAND.	HESSE-NASSAU.	SAXONY.	SILESIA.	

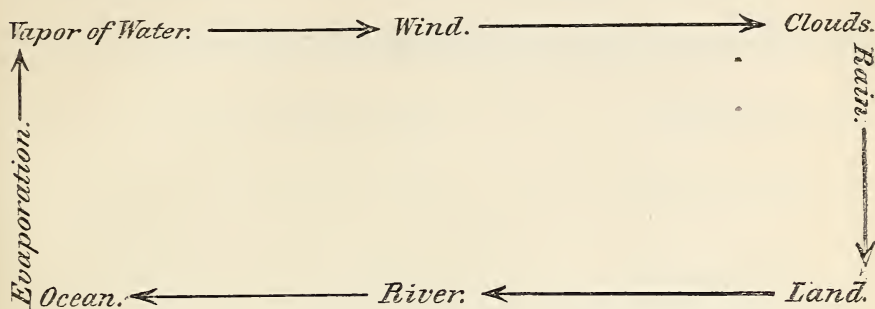
The pupils of a German school have traced the relief of their native land from the shores of the North and the Baltic Sea south to the Swiss Jura Mountains. While doing this they have noted the elevation above the sea in hundred meter intervals of certain leading points. To represent this a vertical line 8½ inches long is divided into 17 half-inch spaces, each representing 100 meters. As this figure is to represent elevation it is numbered from below upward—had direction been aimed at the

reversed plan would have been adopted. The diagram would present the following appearance:



The numbers, of course, are round numbers. Where a point—as the Harz Mountains, Stuttgart, etc.,—lies between the given heights, it is written in its proper place.

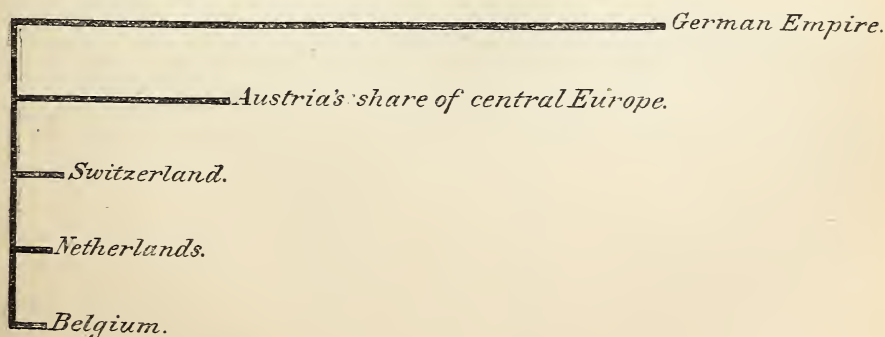
These examples will be sufficient to show the manner of representing position, either horizontally or vertically. Of the value of the plan there can, I think, be but little doubt. As an illustration of the application of the same idea to physical geography let us take the case of the circulation of water, starting from sea, river, or land, and returning as rain. This may be expressed by a diagram thus:



We will now pass to the methods of dealing with geographical magnitudes. I presume that many of my readers have questioned what they should do with such matters as populations, areas, etc. That some use, for instance, should be made of the statistical tables appended to our school geographies will be readily admitted. Yet to require the memorizing of these numbers would be absurd. In fact, in themselves, these magnitudes have no value. They have a value, however, the moment they are used to express a relation. The tables in my geography give me the following facts respecting the leading States of central Europe:

	Area.	Population.	Population per kilometer.
	<i>Kilometers.</i>		
German Empire .....	543,966	45,235	83
Austria's share of central Europe .....	193,396	14,855	77
Netherlands (including Luxemburg) .....	35,587	4,720	124
Belgium .....	29,455	5,655	192
Switzerland .....	41,213	2,846	69

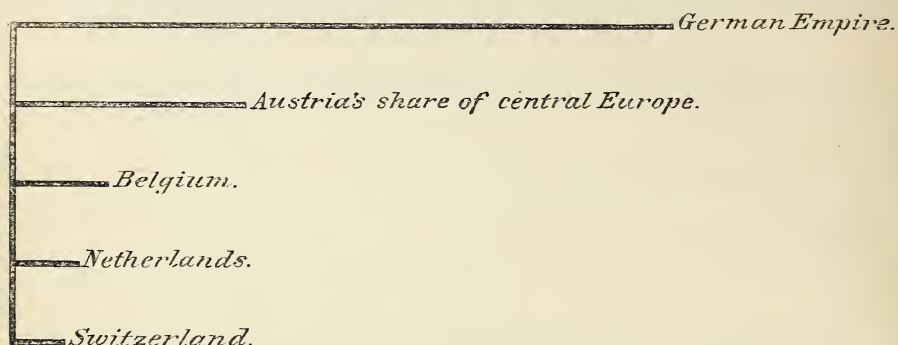
I might of course memorize these details, but of what value would they be and how long should I retain them? Moreover, the quantities in the second and third columns are subject to change. Instead of attempting to memorize them I will represent the relations existing between these numbers. Let us first take the areas given for the above-named States of central Europe and arranging them in a decreasing series, express this by lines of corresponding length, of course "rounding" the numbers:





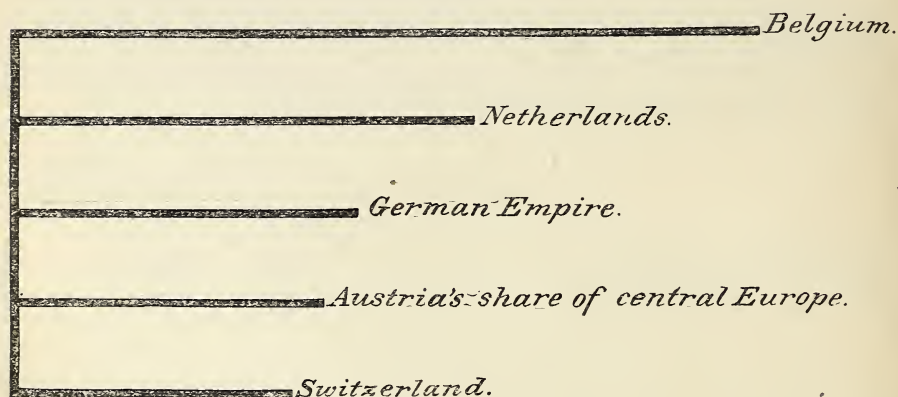
Such a figure appeals to the eye, and the relative length of the lines will remain a long time in the memory. A pupil who makes such a construction reaps a benefit from the work itself. It would of course be desirable to adopt a much larger scale than the one here employed.

Let us now arrange the numbers of the second column in a decreasing series and represent the result by lines.



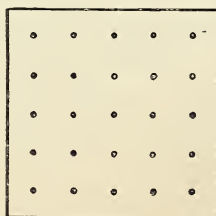
Will the pupil who works this diagram out soon forget that the areas of Switzerland, the Netherlands, and Belgium are inversely as their populations?

A similar treatment of the third column gives us:

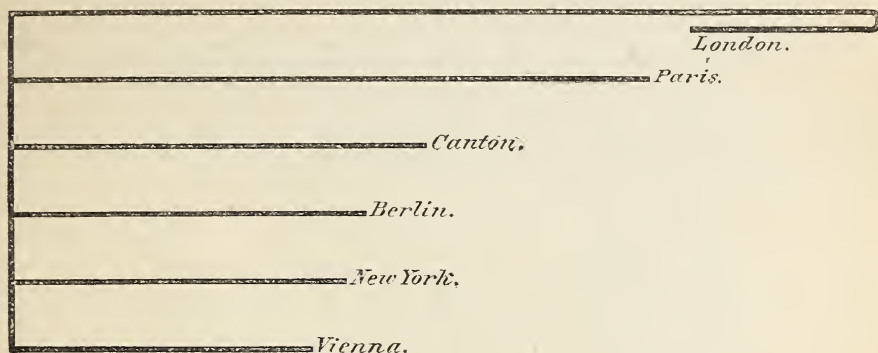


It would be a valuable exercise to try and trace the remarkable reversal of order in this last representation to the character of the surface of each country and its position as maritime or inland.

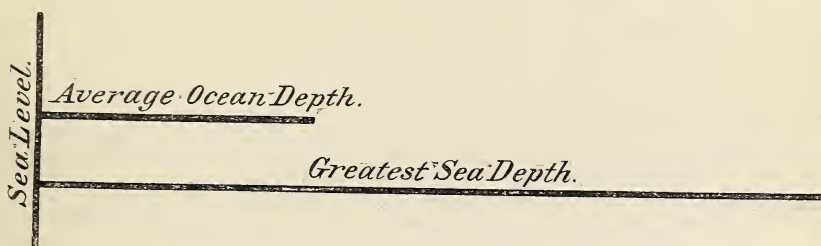
Let us now attempt to express the area of each country and the density of its population together. A square with sides  $3\frac{3}{4}$  inches long would express the area of Germany. The nearest integral square root of its population considered as hundreds is 21. Taking a dot to represent each 100 inhabitants, we place within our square 21 rows, each containing 21 dots, and arranged so as to form squares. Taking Belgium as the next example, we should have a square with  $\frac{7}{8}$ -inch sides and 7 rows, each containing 7 dots. The distance between the dots in the square representing Germany would be  $\frac{11.2}{8}$  inch nearly; between those in the square representing Belgium,  $\frac{1}{8}$  inch. The square representing Switzerland will show the appearance of the diagram:



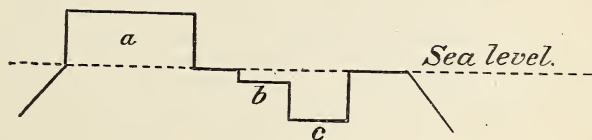
As another example, take the population of six important cities in thousands: London, 3,816; Paris, 2,269; Canton, 1,500; Berlin, 1,278; New York, 1,207; Vienna, 1,105. Taking a line of  $4\frac{1}{2}$  inches to represent London, we should have:



The example given of the vertical positions between the North Sea and the Swiss Jura is also in a certain sense a representation of magnitudes. A similar example may be taken from the average depth of the ocean (3,000 meters) as compared with the greatest known sea depth. (See figure below.)



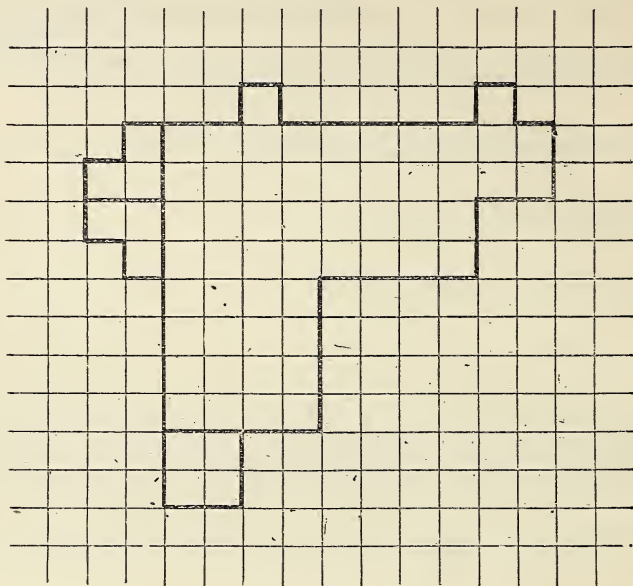
The average elevation of the land mass above the sea level (*a*), 650 meters, and the two most remarkable depressions below it—surface of the Caspian Sea (*b*), 26 meters, surface of the Dead Sea (*c*), 400 meters—may be represented in a diagram profile as follows:



For more advanced work a method is employed by several German teachers of geography which represents at the same time the relative areas and the approximate forms of the countries.

Thus, ruling light lines to divide a sheet of paper into squares, the German Empire, Holland, Belgium, and Switzerland will take this form:

NORTH.



SOUTH.

By tinting each country with different crayons the diagram would be much improved, and by placing within each country as many dots as it has millions of population, an additional relation would be represented.

The mention of colored crayons suggests another mode of representation, with which I will close this paper. Ascertain from the table the density of population of certain selected countries. Take a blank map of the countries and with an Eagle or other brown crayon pencil fill in the outlines of the countries with lighter or heavier strokes according to the density of the population. Of course still nicer work could be done with sepia or india ink.

*VI. Graphic work.—Map drawing.*—It has already been indicated that the facts and relations learned by map reading receive their final association to a complete picture of the region studied through map drawing. While the pupil's verbal statement of the results of his map reading does this work to a certain extent—as he can be said to know only what he can express—so also has he clearly seen only that which he can draw. We must guard ourselves, however, against taking this undoubtedly true statement too absolutely. In the words of Matzat, “Things are never drawn as they are in full detail; the draftsman represents only such of their features as may impress him.” Hence two persons drawing the same landscape may produce strikingly different pictures, yet both be true to nature. This fact lies at the foundation of the distinction between artistic and ordinary drawing. Artistic drawing strives to express delicate distinctions of form, and this conditions its aesthetic value. But on the other hand, if a young child represents a man by a small circle for the head, a straight vertical line for the neck, an oval for the body, and four strokes for arms and legs, he has simply drawn those peculiarities of the human form which he has apprehended. He has seen many other peculiarities, but they have obviously not made such an impression as to result in a visual representation which finds expression in his drawing. As a drawing this child's picture is laughable, ridiculous; but, as a delineation of the undetailed concept of a man that he has so far formed, it is correct. It would have been incorrect had he drawn three arms instead of two. Hence it may be said that there is an abstract drawing equally with an abstract thinking, and we should distinguish between a picture which must be beautiful and a diagram which need only be correct. And the measure of this correctness is in itself relative and subjective. What the child's visual representation contains will be reproduced and fixed by his drawing. A botanist who draws a diagram of a flower proceeds in the child's manner. He wishes to show the number of petals and sepals, their mode of union, etc.; all else is indifferent to him; he is not making a picture of the flower.



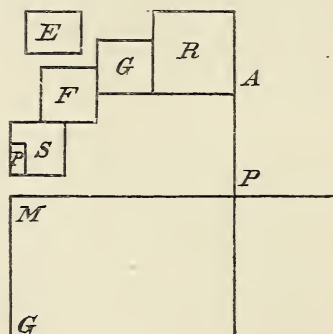
This is exactly the case with map drawing. Maps and profiles are not pictures; they are diagrams, abstract representations of the region studied. Obviously there may be grades of abstraction in these representations—greater or less amount of detail and exactness of form. I wish to show my friend where I live; I draw a rough plan which indicates well enough the position of my home, although the measurements may be anything but correct. So a child should not make a detailed copy of the map in his atlas, but should represent the leading features that he has abstracted from it. So in the words of Wagner we observe the object—in the present case a map—fix the things observed by drawing, and so give evidence of what we have seen.

Since younger pupils have less trained powers of observation than older ones—since the maps studied in the lower grades should be simpler than those studied in the higher—it follows that grades exist in map drawing. The youngest pupils can draw a diagram showing the relative positions of a few localities, the course of two or three rivers, only a simple geometrical figure for the contour of a country. They will thus exercise their self-activity and represent only what they have observed upon the map.

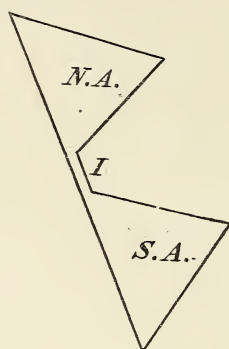
I have aimed to indicate very clearly that, according to the views of some leading German writers upon methods in geography, map drawing is a result of geographical study, serving, indeed, to fix and associate the ideas obtained from map reading, but yet presupposing a knowledge of the facts represented. Observing the map, describing the map, precede representing, however closely they may tread upon each others heels. When the Pestalozzian reform called attention to the importance of making all early teaching objective and the child's formal and material culture an outgrowth of this free self-activity, it effected, among other things, a revolution in geographical teaching. Not the least important feature of this revolution was its insistence upon the importance of graphic reproduction of geographical knowledge by map drawing, not that the value of map drawing had not been recognized before the time of Pestalozzi, but to him is owing the full perception of its true importance. Unfortunately, however, some of Pestalozzi's followers transferred map drawing from its true position of the servant to that of the master, the all in all of geographical instruction. The usual reaction followed, and this valuable aid was condemned and neglected as a result of the over-zealousness of its advocates. The current phrase, "Teaching geography by map drawing," is ambiguous. If it means that the teacher should constantly accompany his instructions by drawing before his pupils the country studied, there can be no doubt of the value of such a course. But if it means that geographical ideas can be conveyed in the first instance by mapping on the part of the pupil, its truth is questionable. At best, such work would be map copying, and of course geographical facts could be learned by the process. This, however, would not be map drawing. A pupil can intelligently delineate that only of which he has a clear concept. Never can the graphic representation of a concept precede its formation; geographical forms can not be drawn unless they are known. The various lines of a map have a meaning only when duly interpreted. A pupil's map is simply a review, valuable as an evidence that he has clear and vivid concepts, and, like every review, serving to confirm them. But a pupil can never originate a knowledge of geographical relations by drawing. In the words of Von Sydow: "He must so work that each stroke drawn is a pictured thought, and the picture itself which he projects a result of his own intuition." Theodore von Liechtenstein, a celebrated teacher of geography in the Berlin Cadet School, says: "Map drawing has value only in so far as the physical relations of a country are delineated in the most time-sparing manner. \* \* \* It will tend most to geographical culture if the pupil, after memorizing and reciting the matter, projects in rapid outlines the country under consideration; or in the presence of the teacher, as a recapitulation, sketches it with chalk upon a blackboard." As Dr. Abbenrode remarks: "Map drawing, a valuable aid to geographical instruction, is not that instruction itself;" and Professor Heiland, of Weimar: "Drawing must not be the starting point of the study of a country, but its result."

It was remarked above that map drawing should be graded. The map drawn by a pupil of the primary grade may, like the child's picture of a man, be a mere diagram, and yet may adequately represent the ideas formed from the study of the wall map. Professor Göpfert, in an article upon first-year work in geography, remarks that "Geographical training and understanding does not depend so much in the first instance upon exact knowledge of the outline of a land as upon a knowledge of its position in regard to neighboring lands, seas, etc. It is not at first important to know that France has ten peninsulas. Rather should the pupil's attention be directed to the fact that France lies between two seas and two countries; for in this consists its importance. So the isolation of Spain, the insular character of England, the position of Germany in the heart of Europe are facts of prime importance. For the sharp apprehension of these relations it is desirable to disregard all unrelated facts. Hence it is necessary only to note certain important limiting points given upon the map, as that the northeast boundary point of Germany if continued east-

ward would bisect Russia, and the southwest continued westward, France. So, also, the northeast point of Spain continued northward bisects France. These fundamental points in the position of these lands once fixed, much would be gained. Further—the relative proportions—Russia equals one-half of Europe, etc.—are readily noted from the map, as also the smallness of Europe compared with Asia and Africa and the position of the Mediterranean Sea." A pupil's map representing the knowledge obtained up to this point (Scandinavia, Denmark, Italy, and the Balkan Peninsula have not yet been studied), a mere diagram representing position and proportions, would be something like the following figure:



If the pupil has noted the triangular form, direction of shores, and isthmus connection of North and South America, the following figure would express his knowledge:



If at first these maps, or rather diagrams, appear strange, a little consideration will show that they are a fair expression of the pupil's supposed knowledge at this stage. The detailed contour of a country it would be impossible for him to fix in mind; position and proportion are possible to him, and his diagram represents just what he has observed. These figures are in fact but a simplified form of the graphic work described in the preceding paper and are but a slight remove from the diagrams in everyday use among statisticians and others. They would seem to admit of development into a practical and simple system of elementary map drawing.

*VII. Map drawing.*—We now pass to filling up the outline. Since the rivers have already been noted in reading and representing the coast, Professor Heiland takes them up before the relief. (See Art. III, p. 293.)

The map reading shows that four great rivers traverse the peninsula of Farther India from north to south—Irawaddy, Saluen, Menam, Mekoag—and that their direction is determined by five meridian mountain chains, diverging southward. Passing north we find that the first, second, and fourth named rivers rise near together, north of the west part of the tropic of Capricorn. Distance estimated and drawn. Irawaddy traced and drawn to Mandalay (halfway down); westward curve of river below Mandalay noted and drawn. Branching of delta noted and drawn. Other rivers similarly located. Mountain chains studied and drawn. Close by profile across the peninsula from west to east. Repetition by all pupils on blackboard. Drawing on paper at seats without reference to wall or hand map. If this last can be worked out in color so much the better.



As a second example, we will take Dr. Jarz's method of drawing the outline of Africa. He first notes the relation of Africa to the parallel of  $10^{\circ}$  north latitude and the meridian of  $40^{\circ}$  east longitude from Ferro ( $20^{\circ}$  east from Greenwich, would answer the same purpose). The length of the meridian between  $10^{\circ}$  north coast is used as a unit of measure. This unit is laid off from the point of intersection twice south, once and one-fifth east, once and a half west. This determines, in addition to the north coast, Cape Agulhas, Cape Verde, Cape Gardafui. The map is then read from Bengazi to Cape Bon and drawn. Then from Bengazi to Rosetta, Rosetta to Strait of Bab-el-Mandeb, Bab-el-Mandeb to Mozambique, etc.

Dr. Steiner's drawing of the Alps will furnish an excellent example of the treatment of a complex mountain system. The position of the Alps in a northeasterly curve from the Mediterranean to Vienna is first read from the wall map and then the coast of the Mediterranean from the Rhone mouth to the Gulf of Quarnero is read, drawn on the board, and reproduced by pupils. The eastern limit of the Alps is then read and drawn and the difference in width between west and east being noted the general form is put in with the length of the crayon resting on the board. The valleys are then read and wiped out from the broad belt on the board; so, also, the division into three main parallel chains and the chief rivers are noted and drawn. The leading passes, cities, railroads, etc., are in succession read and drawn, and finally political divisions. Each step in the teacher's drawing is followed by description and drawing by the pupils.

Matzat's method has some peculiarities which deserve mention. It is based on the idea of the "compass charts" used by sailors before the introduction of maps based on parallels and meridians. "But a very small number of points on the earth's surface are astronomically determined according to latitude and longitude. The position of the rest is fixed, either through triangulation or by a survey of routes, either in compass directions or time distances. \* \* \* The net of parallels and meridians aims only to fix the position occupied by each terrestrial space in relation to the entire surface of the earth. If the terrestrial space is considered by itself this net of lines may be dispensed with. The history of cartography shows this to be true. Useful maps with parallels and meridians were a product of the beginning of the last century; but there were good maps before that time. The ancients had maps with such lines, but very incomplete, because they were based merely on estimated distances. When the navigators of the Mediterranean discovered the means of determining direction, they made without parallels and meridians maps which are even now surprisingly accurate. Upon these two primary elements of all specific geographical localization, distance, and direction, in brief, the principle of the compass charts, I found the geographical drawing of pupils."

After the map is read Matzat directs the teacher to name the point from which the drawing shall begin. In countries near home this will be the schoolhouse or the native town—in distant countries its chief city, the distance and direction of which, however, from the native town, must be first determined. The distance and direction from this central point of the first feature to be represented is determined by the pupils by measurement on the map. The distance is taken with a pair of dividers, and with this radius a circle described from the central point upon the wall map. Features which touch or are near to this circle and their direction from the central point are then noted. The central point is then marked upon the blackboard, the circle described upon an agreed scale, and the features noted are drawn. This process is repeated by the pupils upon their slates or paper.

For the sake of completeness it should be noted that the use of map drawing is not without its opponents. The most emphatic of these is Dr. Böttcher, director of the Real Gymnasium of Burg. In the Easter programme (1881) of this institution he publishes an essay, "Vorschläge zur Methodik des geographischen Unterrichtes mit Beispielen aus der Schulpraxis." The first part of this essay is an attack upon the use of map drawing. His chief points are that it is an error to assume that map drawing is the only way to lead pupils to a knowledge of the map; that it robs the subject of time out of all proportion to the results reached, and that may be better used otherwise; that the maps drawn by children are horrible caricatures of the reality and tend to destroy the truer concepts formed from the study of good wall and hand maps; that but few teachers are able to draw even passable maps on the blackboard.

Böttcher proposes his "descriptive method" as superior in every respect to the "map-drawing method." This is briefly a careful reading of the map and a full, clear statement of the results guided by the teacher's questions. Dr. Böttcher has recently expanded his essay into a work on Methods in Geography.

The school section of the First German Geographical Congress, June 7, 8, 1881, adopted the following resolutions after an animated discussion of the subject of map drawing:

(1) The German Geographical Congress recommends drawing in geographical instruction as an indispensable means to the promotion of clear intuitions and as a powerful aid to awakening the self-activity of pupils.



(2) It declares itself most positively against the widespread evil practice of setting pupils to draw maps as a home task without fitting them for the work by a gradually progressive training.

(3) It condemns the use of straight lines to express the lines of a map (Lohse's method), since this plan is not adapted to develop the pupil's sense of form, but rather debases his taste in regard to map representations.

(4) It most positively condemns the systematic carrying out of the so-called constructive method, since it requires an artificial system of aids (lines and points), the knowledge of which is in the main of no value to the pupil, and burdens his memory heavily in a useless way.

(5) Condemns special preliminary courses of topographical drawing as aside from the purposes of the common school.

(6) It recommends the method of free sketches of single terrestrial spaces as reproductions of typical relations studied from the map, since these can be adapted in amount of detail and mode of execution to the capacity and skill of the pupils.

I close this subject with the following extracts from "Ten theses concerning drawing in geographical instruction," adopted at a recent meeting of the teachers and inspectors of Vienna:

"A moderate application of drawing in teaching geography is a pedagogically valuable, but by no means indispensable, means to right apprehension and memorizing the map. Drawing is only a means, never an end in itself. \* \* \* The geographical drawings of the pupils is limited by the degree of their skill in drawing, the representability of geographical objects and the special aim of the instruction in geography. \* \* \* The pupils' drawing is restricted to the representation of geographical specialties (single rivers, reciprocal positions of places, mountains, etc.). Political boundaries, long coast lines, whole countries, and grand divisions are excluded. \* \* \* The requirement that at the end of a year the pupil should by way of review be able to draw from memory the maps of the year is condemned on account of the resulting overburdening."

*VIII. Relief work*—*The graphic representation of relief*.—Ordinary maps furnish a fairly accurate representation of two out of the three dimensions of terrestrial spaces—length and breadth. If the principle of the projection used is taken into account, they also include the element of curvature of the earth's surface. This is true whether the projection aims at equivalence or at conformity. But when the third dimension, thickness or relief, is to be represented, the case is somewhat different. The signs employed are in a certain sense conventional, yet are at the same time a generalization from observed natural facts. The conventionality consists in making a special case general. Thus, if the method of shading is used—whether in lines (hachures) or in flat tint—the light is assumed to fall vertically upon the surface to be represented. Under such conditions all horizontal surfaces would receive full light, and would be left white. Vertical surfaces would receive no light, and hence would be shaded absolute black. Surfaces of intermediate inclination would be lighter or darker, according to inclination. Thus, at  $45^\circ$  slope the shade marks would occupy half the space, leaving the remaining half white. In a slope making  $30^\circ$  with the plane of the horizon we should have one-third shade, two-thirds white. On the contrary, a slope of  $60^\circ$  would have two-thirds shade and one-third white. For exact topographical (e. g., military) maps this system is applied exactly, and a "shade scale" attached to such maps enables the user to learn readily the slope of the country. Generalized, we have the principle the darker the shading the steeper the slope, and to this extent it should receive consideration in good school maps, especially in wall maps. Of course, as a matter of fact, it is only in certain places and at certain times that the sun light falls vertically, and it is in the assumption of this condition as universal in place and time that the conventional element in representing relief consists. In some countries map draftsmen make a modified assumption—they take the light obliquely, usually from the northwest. This is commonly the case in special maps of parts of the Alps, and is justified by the prevailing greater steepness of their south and east slopes. But in a combination of hill with high mountain country this method would fail in expressing properly the hill land. French map makers employ this plan almost uniformly and with justice, as a glance at the physical structure of France will show—its steepness toward the valleys of the Rhine and the Rhone, its plateau and terrace structure to the west and northwest.

But this convention not only serves to express the relative steepness of mountains, it also gives a clue to their form.

A pupil who possesses a knowledge of the language in which a map expresses relief will be able to read from a properly made map, and to give a clear and definite account of the physical structure of the region he is studying. It is one of the objects of home geography to put the pupil in possession of this power. The need for this knowledge is also one of the reasons that make it desirable to precede grammar grade work in geography by a course in advanced home geography. To this end, also, the best German and Swiss school atlases contain one or more maps

especially designed as an "introduction to the understanding of maps" (*Zur Einführung ins Kartenverständniss*).

Shading expresses the form and degree of inclination of relief, but gives no knowledge of its amount.

The reader is undoubtedly familiar with the method employed on physical maps for representing the difference of elevation between highland and lowland by coloring one brown, the other green. This is really an application of the method explained above, since the line of separation between the two colors is a line of elevation; it is also a contour line. On Professor Guyot's wall maps the depth of the mountain shading is used as index of height. This is objectionable, since this element has already been employed, as stated, to represent the degree of slope. It, however, points to a method largely used in Europe as an adjunct to contour maps. The spaces between the contours are colored either with different colors for each degree of elevation or with different tones of the same color. Usually in the latter case a warm yellow brown is used, increasing in depth as the height increases. Accessible examples of this are the hypsometric United States map in Scribner's Statistical Atlas, and a similar map in Vol. I of the Tenth Census. A good example of this use of combined contour and color for school purposes is Dr. Carl Vogel's Schul-atlas, published by Hinrichs, Leipsic. On his map of Europe, for instance, four tones of brown are used. The lightest represents lowland, the others successively 250, 1,500, 3,000 feet, the snow region being left white. A very beautiful modern example is an "Orographical Map of Scotland," by John Bartholomew, in Vol. I (1885) of the Scottish Geographical Magazine. A large scale edition of this (22 by 29 inches, or 10 miles to an inch) has been published by Black, of Edinburgh. In the small sketch maps illustrating E. v. Seydlitz's Schul Geographie the same idea is carried out, using horizontal shade lines of different depths instead of color. This is, of course, not quite so effective, but still it gives a fair idea of gradations of elevations.

In some of the more recent German school atlases shading to represent slope and form has been combined with contour lines and color to represent elevation. This would seem to leave nothing more to be desired. As an example may be cited "Debbe's Schul-atlas für die mittleren Unterrichtsstufen" (equivalent to our grammar school) in 33 maps. In these maps, in addition to the mountain shading, the zones of elevation are marked as follows: Depressions, green; sea level to 200 meters, light green; 200-500 meters, light yellow; 500-1,500 meters, light brown; 1,500-5,000 meters, brown; above 5,000 meters, gray green. As these colors are transparent the mountain shading shows distinctly through them. The cost of this atlas of 33 maps (including an ethnological and a language map of Europe) is 1.25 marks—about 35 cents. A supplement of 16 physical maps (climatic, geological, ethnological, etc.) costs 1.75 marks, about 45 cents. Moreover, the pupil can buy the maps one by one as needed at a slight advance on the price of the entire set.

In the foregoing my purpose has been to show the great importance attached by European teachers of geography to an adequate representation of relief and the care taken to insure its realization by the pupil under the three points of view, form, degree of slope, and elevation. It is interesting to see how these teachers pass from accurate graphic representation of relief to accurate tangible representation—a very different thing from the indiscriminate mud-pie making from inaccurate maps that passes muster as relief work in many American schools.

#### PERSONAL OBSERVATIONS.

A few excerpts from the writings of an American teacher (published in "European Schools") who visited German schools may here be inserted, since they show the actual status of geographical teaching as he observed it. These notes lay no claim to systematic arrangement, for they were gathered as occasion offered, and published in various journals.

*Homeology.*—"Heimathskunde," knowledge of home and its surroundings, is what they term primary geography in Germany. In order to give the reader an idea of what is done in the primary grades, a few suggestions may suffice. Some lessons in "homeology" were heard in Hamburg and enjoyed very much. The results of the lesson were fixed in the form of a sketch map. This map was made on the board as the lesson proceeded.

TEACHER. In what direction is our school from the inner Alster, or Alster Basin? What street on this side of the basin? On the opposite side? On the third? fourth? What separates the inner from the outer Alster? What bridge? What monuments are erected on the esplanade? In what direction from the basin is the Nicolai church? The new polytechnicum? The theater? The Berlin depot? On what side of the Alster Basin is the new hotel, the Hamburger Hof, situated, etc. Some streets were sketched in order to make the picture more vivid.



Every new item was inserted in the sketch on the board drawn by the teacher. Thus the sketch of a city plan grew by degrees, and the pupils drew or imitated this plan on their slates. One can not imagine a more attentive group of young children than these were. Each one was eager to suggest new points known to him. The sketch was copied as the lesson progressed, and its simplicity spoke for itself. No teacher can hide his unwillingness to follow suit behind so flimsy an excuse as "I can't draw," for the drawing of such a sketch presupposes no training nor special skill in drawing.

When the geographical part of the lesson was well disposed of the teacher gave a new zest to the pupils by asking, "To whom belongs the theater, the school, the bridge," etc.? In the most natural way possible the pupils learned something of governmental relations and laid the foundation for the subsequent study of history. It caused a merry interruption when a little boy thought the schoolhouse belonged to Mr. ———, the janitor.

In a higher grade of the same school the geography of Germany was the topic of the day. It was still "homeology," only with a wider horizon. The teacher began by making a few simple lines representing the so-called "mountain cross" in central Europe. After first drawing the Fichtel Mountains, the center of the figure, he added the Erz Mountains toward the northeast, the Franconian and Thuringia forest toward the northwest, the Bohemian and Bavarian forest toward the southeast, the Franconian and Swabian Jura toward the southwest. A few peaks were mentioned, as were also the characteristics of these mountains. Thus, for instance, the silver mines in Saxony, the dense forests in Bohemia, the lovely scenery in Thuringia, the caves of the Jura, etc., came in for a few well-remembered remarks. The teacher always knew when to stop; he was discretion personified.

Now the teacher drew the four rivers which rise in the Fichtel Mountains—namely, Main, Saale, Eger, and Naab—showing and indicating on the map into what main rivers they empty. A few important cities and the countries around the cross were named. All this information was partly given, partly asked for, as the case suggested.

Now the complete map, a printed one, was hung up, and all the information just gained was looked up. Each item was noted, and it made the children fairly glow with enthusiasm when they were able to corroborate the facts of the two maps. In a few points the map on the board was corrected, improved, and completed; then the lesson closed, and now followed the recitation—that is to say, the pupils were called upon to state, in answer to leading questions, what they remembered of the lesson. It was a pleasure to hear them speak out, not like human parrots who had memorized, but like rational beings who had learned by experience. The hour was brought to a close by an imaginary journey all over the section the acquaintance of which they had just made. Many little items of information were added on this journey. Photographic views of rocks and mountain scenery were exhibited, and they proved to be of intense interest to these children, who have no opportunities of seeing a mountain "in natura."

*Ideal teaching in geography.*—It was in a preparatory school in the city of D— where ideal teaching in geography was heard. The school was provided with all possible means in form of maps. The matter of instruction could be graded just as is done in arithmetic, reading, etc. Geographical knowledge has for ages been wrested from overstocked maps. The child has to search painfully among a bewildering mass of data and facts for those which were to be learned. A systematic or methodical progress step by step was, if not impossible, certainly very difficult. Just as little as a teacher would give into the hands of a child a copy of Webster's Unabridged or of Shakespeare's complete works when he begins to learn the art of reading, just as little can it be rational in the teaching of geography to place before him a complete map stocked with a bewildering number of details.

This difficulty was removed in the school referred to. Outline maps were used; first river maps. All the water courses and the ocean were colored blue, while the land appeared black. Below each map was given a profile, or longitudinal vertical section on certain given lines. The pupils drew the map on paper and then inserted the elevations. Then followed another outline map containing the elevations and a few boundary lines. By degrees more items of information were added, such as cities, trunk roads, canals, etc. The principle of Father Pestalozzi, "One difficulty at one time," was carefully heeded, and the pupils were not bothered with maps such as we use in America, which blur the children's mental picture by their multiplicity of detail.

Teachers are apt to labor under the misapprehension that a map is a good one when it contains much. This is an error. According to that argument a school reader would be a good one only when it contained the whole literature from Alfred's time to the present day. Outline maps, silhouette maps, and such means for teaching geography rationally are coming into use in Europe as well as with us in America.



The school referred to was lavishly provided with maps and charts. There were outline, silhouette, and complete maps, geographical, historical, physiological, physical, and astronomical maps and charts. What a wealth there was! And what a joy it must be to teach in such a school!

*Silhouette practice maps.*—The silhouette practice maps facilitate the grading of the matter of instruction and present opportunities for the gradual upbuilding of geographical knowledge as gained item by item by the child. Upon these maps may be entered as upon a blackboard the data to be learned, first by the teacher, afterwards by the pupils, and thus an opportunity is afforded to the child to become a self-active participator in the lesson. When the lesson is completed, all marks or names can be erased with a moist sponge or cloth, and the map is ready for a new lesson or a review.

The silhouette practice maps enable the instructor in history to illustrate with colored crayon changes in political boundaries at different periods. Students of ancient history, as well as general and modern history, can use these maps with great advantage. They do not make common wall maps superfluous, but supplement them. \* \* \*

These maps [as sometimes made] are printed on heavy tack cardboard and covered with a durable waterproof cleansable surface, adapted to receive a succession of markings and cleansings. The shaded space represents the water surfaces. Oceans, lakes, and rivers appear in blue on these maps, the land in black; hence their name, silhouette maps. They are called practice maps because the pupil can practice on them with crayon geography as he does arithmetic.

*Cause and effect in geography.*—The Popular Educator, of Boston, published in 1887-88 some excellent contributions which offered in words and pictures the present status of geography teaching in Germany. These articles leave but little to say on that subject. One thing can be done, though, and it is done willingly, namely, to say that the statements made in those articles are correct. German teachers, not only in Saxony, where the author evidently gathered his information, but also in other parts of the Empire, do teach geography as there stated; if modified somewhat, perhaps, essentially the same methods are pursued, and that with wonderful results.

One would like to transfer to Germany some of our American teachers who can not imagine a geography lesson without verbatim memorizing of the printed text. One would like to show them rational teaching. The fact is well known that we, too, have good teachers, and not a few, either; but it must please a visitor greatly to find every teacher, good and poor, following well-established principles of method. That is the true state of affairs in the city of D—. Even the poor teachers are not without professional training. There is, however, a deep shadow on this bright picture. Many schools are very poorly equipped with means of instruction, such as maps and charts.

A lesson in geography was listened to in a German school where 70 boys sat together like sardines in a box. The teacher had nothing better than a medium-sized wall map made by himself. His mode of marking elevations was very simple and comprehensive, one which is well worth imitating. With pencil or pen he shaded the map by means of lines crossing each other at various angles. Thus he represented the topography of a country in a remarkably accurate manner, and this easy method enabled his pupils to judge at a glance as to the height of the land. They saw why certain rivers took such and such a course and no other; why certain cities were cold, others warm; why a river was navigable or not, according to the abruptness of the slope; why certain rivers flowing from great heights had a straighter course than those which had little fall and meandered through the plain; why certain lands are blessed with mild climates, being sheltered on the north side by high and steep mountain ranges, others had a rough climate, being exposed to the north wind.

The teacher was well informed and gave information in such a manner that it agreed with the children's mental stomachs.

*Example:* The Erz-Gebirge (Ore Mountains) were once full of silver mines. At the time of Martin Luther (at the beginning of the sixteenth century) these mines drew a great number of people to Saxony, and particularly to that range of mountains. When the mines ceased to yield, the population, not being so fluctuating as it is now, was obliged to seize upon other modes of occupation. The slopes of the mountains being well provided with various kinds of wood, offered material for a variety of woodworking industries. The slopes being steep, the mountain brooks were turbulent and gave an opportunity to build mills, which were first used for various purposes. Lately, when the textile industry grew, this water power was utilized to serve that industry. The woods soon disappeared on the Erz Mountains; they were literally used up. So the people had to resort to manufacturing pursuits almost entirely, agriculture being impossible. To-day the population of the Kingdom of Saxony is the densest of all Germany, and, aside from that in Belgium, the densest in all Europe.

It was cause and effect constantly, and the attention and responsiveness of the boys were truly delightful.

One other hint was received in this school. When the oral lesson closed, the teacher sent a boy to the blackboard to make a sketch of the map which the other boys were told to make on their slates. Then he showed that distances which he could cover with the span of his hand should be made 1 inch long on the slate or 6 inches on the blackboard. Now he measured off certain points on the map by spans, and thus gave the pupils a simple scale by means of which they could furnish a free-hand map which was not out of proportion. This procedure leads the way to a more accurate scale and to the thorough comprehension of scales as such. Afterwards even this measuring by spans would be discontinued, and mere eye measuring would be substituted. It was a fine lesson, indeed a fruitful lesson.

*Concentric extension of the geographical horizon.*—It is always attended with a feeling of satisfaction when one observes an idea consistently carried through the different stages of the curriculum, especially if that consistency is in strict compliance with educational maxims and principles. In Berlin a truly refreshing example of consistency is offered in the schoolbook used in the study of geography, which book is an atlas pure and simple, not a text-book. It may not be without interest to read an account of what that book contains, for it is gotten up with undeniable skill. The reader must kindly bear in mind that the atlas is made expressly for use in the elementary (or communal) schools of Berlin. The idea which is so consistently carried through in it is expressed in the above heading.

Page 1 contains six pictures and plans. The first figure is a perspective view of the inside of a schoolroom, and side by side with it is a map plan of that room. This is nothing new in America. Many American text-books of geography contain a similar illustration. It is here mentioned for no other reason than to present an unbroken chain of methodical links. Notice that the atlas does not begin with the hemispheres. The picture with its attendant plan represents the first circle of the pupil's geographical horizon and is drawn on a scale of 1 to 100.

Then follows a perspective view of the whole schoolhouse and a map plan of the building. These form the second circle. Scale: 1 to 300. The bird's-eye view of the figure is certainly an ingenious contrivance.

This is followed by a perspective view of a portion of a city and its map plan. The schoolhouse is again found on this map. These two figures form the third circle of the pupil's horizon. Scale: 1 to 1,500.

Page 2 contains a larger perspective view of a landscape accompanied by a map plan. We find the same schoolhouse and portion of the town represented in the two figures which form the fourth circle. Scale: 1 to 7,500.

Page 3. This extension of the horizon is followed on page 3 by a picture of an imaginary landscape which is inserted for the purpose of teaching the most vital topographical ideas. This picture also is accompanied by a map plan.

Page 4 contains a minute city plan of Berlin, which forms the fifth circle of the horizon. Scale: 1 to 36,000.

Page 5 is Berlin and vicinity, the same city plan but much reduced in size and surrounded by many villages, hamlets, etc., within a radius of 12 kilometers. This forms the sixth circle. Scale: 1 to 100,000.

Page 6 is a map of the governmental district of Potsdam, in the center of which Berlin is situated, this being the seventh circle. Scale: 1 to 1,000,000.

Page 7 is a physical map of the province of Brandenburg (center Berlin). Eighth circle of horizon. Scale of map: 1 to 1,260,000. Map contains also a local map exhibiting the railroads entering Berlin.

Page 8 is a political map of the same province. Scale the same. Local map of the city of Potsdam.

Page 9 is a physical map of Germany. Ninth circle of horizon. Scale: 1 to 4,000,000.

Page 10 is a political map of Germany. Same circle; same scale. Local map of the Thuringian principalities.

Page 11 is a physical map of Europe. Tenth circle of horizon. Scale: 1 to 15,000,000.

Page 12 contains the political map of Europe. Same circle; same scale.

Page 13 contains the map of Asia. Scale: 1 to 50,000,000.

Page 14 contains the map of Africa. Scale: 1 to 40,000,000. Local maps of the Nile Delta, Cape Colony, and Cape Town.

Page 15 contains the map of North America. Scale: 1 to 35,000,000.

Page 16 contains the map of South America. Same scale.

Page 17 contains the map of Australia and Oceania, with local map of Victoria Land, and an illustration of the formation of coral reefs. Scale of main map: 1 to 50,000,000.

The foregoing five maps may be considered the eleventh circle.

Page 18 is again a local map, namely, that of Palestine, a map which is very useful to teachers and pupils in the study of biblical history.

Page 19 contains the twelfth circle of geographical horizon, namely, the Eastern Hemisphere.



Page 20. The Western Hemisphere. Scale not stated.

Page 21 directs the pupils look upward to the heavens. It contains a representation of the northern sky, with the most important constellations and the milky way.

Page 22, the last one in the book, is devoted to mathematical geography. It contains illustrations of the eclipses, of the earth's orbit, the solar system, the phases of the moon, and various very useful devices of similar nature.

These, then, are the contents of the elementary geography in use in the city of Berlin. One may, perhaps, advance objections to this, that, or another item; may object, for instance, to the picture of the quaint city as being foreign to our pupils' surroundings. It must be repeated, for his benefit, that the atlas is not made for American children, but for the children in Berlin. It might be possible to present a series of pictures and accompanying map plans which could be used in large cities, such as New York, Philadelphia, and Chicago.

One may, perhaps, consider it somewhat of a strait-jacket to be tied down to such a course, one which will not give the precocious child a chance to look beyond the "board fence of the circle." To him it may be said: There is no objection at all for any precocious child to look at the next pages and ask questions about them, but the regular, methodical course is here prescribed according to the principle "From the near to the remote." If he desires to deviate from the course, he may skip a few pages, and return to them whenever he sees fit.

But the consistency with which the principle of education that presupposes concentric growth is carried out deserves commendation. We are too often talking of principles and shunning to apply them. Here is a sample of that consistency which does what it preaches. Whether we like it or not, we may at least be just, and find it praiseworthy as such.

*Cause and effect in geography.*—It was a spirited lesson in geography that was heard in Munich, and is worth sketching. The children were of the same age as our pupils in the highest grade of the grammar-school course—13 or 14 years of age, perhaps. Maps were there in abundance, and a handsome large globe was brought in.

The teacher first stated the fact that the heat equator is not synonymous with the mathematical equator; that it is an irregular line lying on an average of 10° north of the actual equator. Now he led the pupils to find causes for this apparently singular fact. Did not the sun strike the earth with equal force north and south of the equator? With the aid of a large globe, on which the prevalence of water on the Southern Hemisphere could be seen distinctly by all the pupils of the class, the fact was soon established that this prevalence of water caused more evaporation than on the Northern Hemisphere. Evaporation, however, they knew from the little study of physics they had had, caused absorption of heat, while land would radiate the heat it received, and thus cause a higher degree of temperature in the atmosphere.

Now proofs of this fact were searched for, and it was interesting to see how quickly the pupils reasoned backward from effect to cause. In the deserts of Sahara and Gobi they thought that they found the effect of great heat on large bodies of land. In the indented coast line of Europe they found the cause of a temperate climate and an absence of dreary wastes of deserts.

Then the climate of the different continents was discussed and the general rule established, (a) that great bodies of land have hot summers and fierce winters; proofs, inner North America, inner Asia, inner Australia, even Russia in Europe; (b) much water was the cause of cool summers and mild winters: Proofs, Western Europe, South America, Southern Africa, and the Asiatic isles and peninsulas. Water tempers the climate.

This lesson was truly admirable, but only its bare results can be given.

The latitude, it was easily inferred, caused the climate. But the latter was greatly modified—that is, made milder or fiercer—by the situation or elevation of the country. A plateau would naturally be cooler than a low plain under the same latitude. Quito in Ecuador, and Pará in Brazil, both almost under the equator, were yet very different in their climates, the former being situated 10,000 feet above the level of the sea, the latter almost on a level with it.

Mountain chains like the Andes, the Rockies, the Himalayas, the Alps, etc., are also causes of great differences in climate, as they may protect the land from certain atmospheric currents and other influences. This was proved by the great fertility of the eastern slope and the rainless western slope of the Andes, also by the two slopes of the Rockies.

These different considerations were summed up in this: Latitude, formation, and elevation of a country condition its climate.

But climate alone does not make a country a desirable place to dwell in. Other things are needed to make it fertile, otherwise Australia ought to be overcrowded, whereas it is but thinly populated. Irrigation is an important condition. Look at Western and Central Europe, and the United States: these countries are admirably irrigated—i. e., watered and drained. The teacher dwelt on this by showing that the United States have in their Mississippi Valley the granary of the world, a most



ideally irrigated, fertile region. Fertility was traced to irrigation in France, Germany, Italy, Turkey, and Spain.

The latter country served as an example to prove that climate, elevation, and irrigation will not suffice to maintain life if the soil is not favorable. In Spain the forests that used to crown the lovely mountains, and constantly feed the picturesque and navigable rivers meandering through the valleys, have been uprooted. Ruthless extermination of the forests had made the hills bare, the rain had washed the fertile soil from the unprotected mountain sides, and the rivers now dry up in summer and threaten death and destruction in spring, when the melting of the snow fills the river beds and causes inundations.

So, then, proper soil is another condition of life, and we have the principle that climate is caused by latitude, formation, and elevation of the country; that proper climate, favorable irrigation, and good soil condition an exuberant vegetation. Vegetation, of course, is a condition necessary for the animal kingdom. But, while the latter depends for subsistence upon vegetation, the former is in no small degree dependent upon animal matter for subsistence. So, again, we have cause and effect. And the chain lengthens; latitude and elevation cause climate; climate and irrigation condition vegetation. All these are necessary to support the animal kingdom.

Where all these conditions are favorable human existence is assured, and the human population of a country stands in exact proportion to the presence or absence of these conditions. This was conclusively demonstrated by the population of North America. The United States, situated in the temperate zone, traversed by lofty mountain ranges which afford admirable irrigation, possessing on the whole a very fertile soil, had all the conditions of an exuberant vegetation and support of animal and human beings. Consequently we find them populated by about 60,000,000, while north and south of them, in Canada and Mexico, the population is comparatively sparse.

The pupils were almost breathless with attention, and, when called upon, gave geographical facts in support of the teacher's assertions quite readily. This was a review lesson, which, while offering new vistas into the science of geography, caused the pupils to brush up their knowledge of geographical facts.

The task given out for the next lesson was: "Find proofs for the truths we have discovered to-day."

"Will they be able," asked the visitor, "to find more proofs?"

"I should think so," was the reply of the teacher. "They worry their fathers, mothers, uncles, and aunts for further proofs; they consult the libraries; they ransack every source of information, until they find proofs. A truth thus discovered, as we did in this lesson, acts like leaven; it grows and induces the learner to proceed in his investigations. And it will scarcely be necessary to recapitulate these facts, for indigenous thoughts are like words engraved with steel into granite, while borrowed thoughts, such as are learned by heart from the printed page, are words written with a reed on dry sand; the next rain will wash them out."

#### CONCLUSION.

In connection with the foregoing it would seem proper to mention several devices recently brought out in this country. They consist of relief maps for the use of schools. All relief work in sand, clay, and putty on a large scale, done by pupils, must necessarily remain crude and imperfect. Sand maps invariably exhibit incorrect outlines, exaggerated elevations, and various other imperfections, which tend to vitiate the geographical image in the mind of the child and thus perpetuate incorrect impressions. Map drawing which, of necessity, has to be done quickly, owing to the short time that can be devoted to it, is not likely to facilitate the acquisition of correct geographical knowledge. For the purpose of obviating both these difficulties, and to adhere to the principle that we learn by doing, embossed relief maps are designed. It is intended that the child shall use these maps as supplements to its text-book. Being made of cardboard of the same size of the text-book, he can slip the relief map into his book, carry it home and use it as a geographical slate. These maps are manufactured like embossed flowers, and covered with a washable, cleansable surface, which permits a succession of pencil markings and cleansings. Being very durable, these maps can be used as long as the instruction on a continent or country lasts. The chief excellence of these maps lies in the fact that the pupils have before them nothing but the coast lines of the continent, the elevations and the rivers, and no names whatever, hence the maps can not be charged with containing a multiplicity of detail that might bewilder the child. He can enter all geograph-

ical data as he is made acquainted with them; he can trace with pencil the coast lines, boundary lines, river courses, elevations, etc.; he can locate cities, battlefields, railroads, harbors, islands, peaks, etc.; he can perform geographical tasks as he solves his problems in arithmetic, on a slate, and then erase them with a sponge as he cleanses his slate. The geographical instruction can thus be made a step by step procedure. The teacher can eliminate that part of knowledge which is not suitable at a given age of the pupil; in other words, she can grade the instruction as she does the difficulties in arithmetic and grammar. These cleansable relief maps prevent wrong impressions concerning the outlines, since they are made according to approved models in form of flat surface maps. Of course they can not be as correct as relief maps on a large scale might be, but they are sufficiently clear and distinct without showing too great exaggerations of elevations.

Relief maps are also made of plaster and other hard material in this country on a much larger scale than those described in the foregoing paragraph. They represent the curvature of the earth's surface, are excellently executed, and will doubtless facilitate the teaching of geography.

Relief wall maps of papier mâché are also published in America on a large scale. These attempts supersede the flat surfaced wall map by giving names and boundary lines in color. They are set in wooden frames and can be suspended on the wall.

And, lastly, a relief globe is published which shows the elevations and depressions on land as well as the depressions of the bottom of the sea. It is a superb piece of workmanship, and will doubtless contribute to the acquisition of correct geographical concepts.

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## CHAPTER VIII.

### THE COMMON SCHOOL SYSTEM OF BAVARIA.

[A brief statement by LORENZ REISER, teacher in Munich.]

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After the treaty at Versailles, November 23, 1870, the Kingdom of Bavaria was invited, with the other twenty-four German States, to form the present German Empire (Deutsches Reich). For a number of concerns, such as industry and its protection, traffic, and duties, a common system of values, weights, and measures, railroad, telegraph, and postal service, army and navy, sanitary and veterinary police, etc., the laws for the entire Empire are made by an imperial council (Bundesrath), together with the imperial diet or parliament (Reichstag), and published, if they find the sanction of the Emperor, in the national governmental journal (Reichsanzeiger). But outside of these things Bavaria is independent as regards the making of its own laws with respect to home and property, as well as the management of its railroad, postal and telegraph system (Württemberg also has this right reserved), and during peace the chief command of the army remains in the hands of its own king.

The schools, and especially the common school system, are left to the government of each separate state, with the exception that the imperial laws retain certain general rights relating to them. For instance, the national regulation of industry (Reichsgewerbeordnung) of July 7, 1883, in article 135, states:

Children under 13 years of age shall not be employed in factories. Children over 13 years may only be employed in factories when they are no longer required to attend the common schools. The length of time for the employment of children under 14 years of age shall not be more than six hours a day. Young persons between 14 and 16 years of age shall not be employed in factory work longer than ten hours a day.

Article 62 states: "In the pursuit of the peddling business, traveling from place to place, it is forbidden to employ children under 14 years of age." According to the law of compulsory vaccination (Impfgesetz), enacted April 8, 1874, for the entire Empire, every child on entering the common school must present a certificate of vaccination, and every pupil attending either a public or private school must undergo a second vaccination sometime during his twelfth year of age. According to



article 35 of the national criminal code (*Reichsstrafgesetzbuch*) no child under 12 years of age shall be subjected to any punishment under criminal law. According to article 123 of the same law entering a school by any person without authority or a permit is prohibited. Throughout the Empire the general law of compulsory education has been established, but in the different states the age of entering and leaving the common school is not the same.

The various school systems of Germany are divided on denominational lines. The local superintendency of the common schools rests chiefly in the hands of the clergy, but as exceptions may be noted the public (common) schools of Baden according to the law of October, 1860 (amended in 1862 and 1868), were separated from the church. The same was done in Hesse according to a law passed June 16, 1874. The denominational schools of Württemberg, which have had their own school laws since 1836 (amended in 1853 and 1865), have a combined state and ecclesiastical superintendency. The Duchies of Anhalt and Saxe-Coburg-Gotha also have their own school laws. The efforts of the Prussian Government to organize the public school system of that Kingdom by a general organic law have not yet been successful, and the bills to this effect which have been submitted to the House of Deputies (*Abgeordnetenhaus*) for the last few decades (repeated January 14, 1892) have not found the approval of the house. The public school, as proposed in this bill, was in future to be religious in character without exception. The school was to be surrendered to the church. When the bill was submitted it called forth a great commotion throughout the whole country, which expressed itself in innumerable press comments, all strongly condemning the bill. Prof. Felix Dahn, of Breslau, published a pamphlet criticising the bill, in which he said:

It is one of the saddest and most hazardous attempts made in Prussia, or in the whole Empire, since Prince Bismarck has been put out of office, and the thought of enacting this proposition into a law is depressing.

The progressive ideas of the year 1848 tended in Bavaria toward a necessary improvement of school education, which resulted in an increase in the teacher's salary. Before this time the schoolhouse served both for school purposes and as the home of the teacher, who had his sleeping quarters in the garret. Afterwards the school buildings were changed into suitable residences and recitation rooms were newly erected.

The normal regulations of May 15, 1887, laid down new principles for the training of school teachers. The diet (*Landtag*) of 1861 expected to pass a new law by means of which the entire public school system was to be regulated. Instead of this there was enacted the school-endowment law (*Schuldotationsgesetz*) of November 10, 1861, as the first step toward legislation in behalf of the public school, thereby regulating external conditions of the school, especially the payment and pensioning of teachers.

A few years later, October 31, 1867, a school bill was proposed to the diet, in which a general school law was intended, which was to rest on the fundamental principles of modern education and statesmanship. But the second chamber (Reichsratskammer) refused its sanction, believing that the proposed law tended too much toward a diminution of the church's influence as well as containing the germ of the separation of the school from the church. The bill assailed especially the organization known as the district board of trustees. According to article 115 every province (Bavaria is divided into eight provinces, Kreise or Regierungsbezirke) should be divided into a certain number of districts, and for each district one of the best qualified teachers should be appointed by the Government as school inspector.

Hence, legislation having failed in Bavaria, there are now only a few points in the public school system, such as defrayment of the school expenditure (Schulaufwand), home relations of teachers, lawful punishment for neglect, etc., which are regulated by law. School affairs are dependent, first, upon a number of ministerial resolutions and ordinances (i. e., such orders as the head of the State, without the cooperation of the Diet, can make, with ministerial counter signature) which are not organically combined, and, second, upon a great number of special regulations and orders, issued by the head of the department, by means of which, from the beginning of this century up to the present time, the public schools were regulated and their management changed from time to time.

As many as 6,857, or 95.3 per cent, of the common schools of the Kingdom are found in the country, according to official reports. The present description relates principally to these schools in the seven contiguous provinces of Bavaria, for in the Bavarian Palatinate, which yet retains many laws and civil institutions peculiar to itself from the former French rule, there are also some peculiarities in the school system. The city schools of Munich have been governed by a local ordinance since January 1, 1872, known as the "Schulstatut" of Munich. This report would become too extensive if the Munich city school system were considered.

Before the Reformation there were no municipal schools. The education of the young lay entirely in the hands of priests and monks. The State for the first time entered into school matters in 1548, under Duke William IV, who in that year issued the first school ordinances of Bavaria. A real separation between the German and Latin school system had not yet taken place. For the first time in a voluminous school law of the year 1569 the Latin and German schools became officially separated in the principalities of Upper and Lower Bavaria. Also, in 1659, under Ferdinand Maria (1651-1679), there appeared a regulation for school discipline for both German and Latin teachers and pupils. A more extensive and effectual organization, which touched upon the true relationship of school and state, came into existence with



and took the form of the Bavarian common school system (*Volksschule*) during the reign of Elector Max Joseph III (1745-1777). Influential men of this period of reorganization were Freiherr Adam von Tokstätt and the Benedictine friar Heinrich Brarun, whose convent was in Tegernsee. He prepared, in obedience to the wish of the elector, the school plan (*Schulplan*) of 1770. The real fundamental document for the purpose of newly organizing the public school system may be considered to be the ordinance of December 13, 1802, by means of which compulsory education during the age from 6 to 12 years and an examination at leaving the school were established. An order was issued in the following year for children to attend Sunday and holiday schools during the age from 12 to 18. Bavaria was one of the first German States to establish Sunday schools. (See p. 331.)

During the years from 1804 to 1806 a plan of instruction was issued for elementary schools, both in the country and in the cities, but this plan far exceeded all possibilities of carrying it into effect. The new edition of this plan, published in 1811, was drawn up in six sections; in the first division the real purpose of school education was expressed; the second provided for an institution for the training of teachers, and contains both general and special regulations and maxims; the third division, which was added in 1810, contained a more particular definition of the teacher's duties in the three different grades of the school.

As regards the arrangement of the matter of instruction, the plan depends upon the ideas of Pestalozzi; as regards the mode of teaching, upon those of Basedow. But if we go into particulars, there may be found traces of almost all the numerous school reformers of that age. The entire plan is an example of pedagogical eclecticism. The requirement of the kind and number of subjects to be taught is quit exact. For the first grade were prescribed the most important subjects, including the three leading principles, viz, "God, language, number and measure"—that is, religious instruction, reading, writing, and arithmetic. In the second grade were added the subjects conducive to the public good, so called because a certain knowledge and skill in these is necessary for most purposes and advantages in various callings of life. This course contained the three subjects, "man, nature, and art," represented by history, geography, and natural history, as well as drawing and regular exercises in singing.

In 1856 seven years of attendance in the public school was made general. It was then declared that the matter prescribed for the public school should not be increased, for the extension of the school term was intended only for a better training in the branches already prescribed.

At present the above general school plan, which yet serves as the basis of instruction in the public schools, has been replaced by other special plans, which, during the last twenty years, have been prescribed for separate provinces (*Kreislehrpläne*). They adhere without excep-



tion to the inductive method and the principle of concentration in the matter of instruction.

Instruction in the natural sciences must depend entirely upon the established text-book. Nearly all the provincial plans begin geographical instruction as a continuation of the first three years' instruction in object lessons and local geography, taking up the regular study of geography in the fourth school year. In some provinces instruction in history begins in the fourth school year, in some in the fifth, and still others in the sixth. Instruction in natural history, which is really begun in the form of object lessons during the first three school years, is generally taken up as a regular study during the fourth school year. Physics is mostly assigned to the last three years of the course. Singing exercises are given regularly. The songs practiced are partly juvenile, popular and national, and partly religious songs, which are learned by ear, and, if possible, from notes. Munich has a central singing school with a three years' course of four lessons a week. Drawing is taught in several provinces (Ober und Unterfranken) as an optional subject; in others (Oberpfalz) this study is made obligatory. The provincial plans intend to make gymnastics general and games (Jugendturnspiele) are encouraged. For the city schools of Munich gymnastics were made obligatory, according to article 5 of the city school statute of 1871, for both girls and boys. The schools of Munich have had a separate plan since 1871, which was changed and amended in 1872 and 1880. This city school course requires high attainments.

Every country school in Bavaria must have its own special school garden for the purpose of giving instruction in gardening and planting. In most of the provinces instruction in female handiwork is required, for which a female teacher is employed.

The Kingdom of Bavaria had in 1892-93 as many as 7,492 school buildings, in which there were 13,688 school or recitation rooms.

(a) In the ordinary schools (Werktagesschulen): 822,175 pupils; 402,990, or 49 per cent, male; 419,185, or 51 per cent, female; 143,825 in the cities; 678,350 in the country.

(b) In the holiday schools: 314,605 pupils; 139,036, or 42.2 per cent, boys; 175,569, or 55.8 per cent, girls; 36,372 in the cities; 278,233 in the country.

Of all the German recruits, both land and naval, the number who could neither read nor write was as follows:

Year.	Number.	Per cent.
1881-82.....	2,332	1.54
1891-92.....	824	.45
1892-93.....	715	.38

*Illiterate recruits in 1891-92.*

	Number.	Per cent.
Prussia.....	790	0.69
Bavaria.....	3	.01
Saxony.....	1	.01
Württemberg.....	2	.03
Alsace-Lorraine.....	19	.35

By an edict of September 5, 1808, the school boards were newly organized. Their decisions were made dependent upon the department of the interior (Ministerium des Innern), section for public educational institutions and training schools. The provincial governments (Kreisregierungen), with their school superintendents (Kreisschulräte), were appointed to become intermediate agencies, and into their charge was given the supervision of the district boards and local trustees. According to a resolution of the Diet of 1825, the office of provincial school superintendent was abolished, and in its place a pedagogical advisory board for every province was appointed (Kreisscholarchat). This board consists in every province of four Kreisscholarchen and two assistants, who are appointed from among the leading professors, inspectors, and teachers. They attend the meetings of the provincial government when leading questions of public instruction are discussed and decided, and they perform their functions without pay.

The department of educational and ecclesiastical affairs (Ministerium für Kirchen- und Schulangelegenheiten) was established February 27, 1847, and even to-day it exercises legislative as well as executive power over the school system of the Kingdom. For the common school system a councilor is appointed (königlicher Ober-Regierungsrat).

The department has the right of proposing school laws and ordinances and of issuing executive instructions or granting permission to use certain text-books and other material for the public and normal schools. It has the right of proposing measures to be adopted by the King regarding the removal of the Kreisscholarchen, provincial inspectors, and teachers in the normal schools (Schullehrseminarien). It also has the management of the funds for institutions of learning and of that of the establishment for the publication of text-books. This latter institution was founded in 1785 with the purpose of printing and publishing uniform schoolbooks and furnishing cheap stationery and such other articles as are necessary for supplying the schools without creating a monopoly. At present the publication is not done by the Government, but since January 1, 1874, has been leased to R. Oldenbourg, in Munich. The books prepared by this establishment are not allowed to be used in the public schools unless the department has approved them. The use of slates and copy books ruled crosswise is prohibited because injurious to the eyes. On this account drawing lessons according to the "stygmographic" method must not be given, and the using of colored pencils on slates is not allowed on account of the danger of poisoning.

The supervision of all the schools of a province is in the hands of the provincial government, the department of the interior. The management of school affairs is generally transferred to a governmental councillor (Kreisschulreferent), who represents the provincial government in all technical questions concerning the common school system. Since 1873 a teacher has acted as county school inspector (Kreisschulin-spector) for each province, and some provinces have two or three.

To the duties of the provincial government belong the preparation of a provincial course of instruction; the issuing of orders and regulations (these are executive instructions and orders based upon existing laws, ordinances, and general decrees of the department); the establishment of school districts and schools proper; the visiting of the schools; the superintendence of the normal schools; the appointment, discharge, and pensioning of teachers; the holding of state examinations (Anstellungsprüfungen) of teachers, and the appointing of district inspectors (Districtsschulinspektoren). These immediate assistants of the provincial governments are, as a rule, taken from the Catholic or Protestant clergy. Their business is to oversee the several schools in their districts and to watch the conduct of the local trustees (Lokalschulinspektoren) and teachers. The district school inspector has to make one official visit to each school every year. It is also his duty to release those pupils from school who have passed the age of compulsory attendance. This examination generally takes place in the country schools at the end of the winter term (March or April). In the so-called "immediate" cities, 50 in number (these are cities which are subordinated, not to the district administration, but to that of the provincial government), the power of district trustees is intrusted to a city school commission. For the next lower directing power there is in every school ward (Schulsprengel) a local board (Lokalschulinspektion), whose chairman is a clergyman (Lokalschulinspector). The membership consists of the mayor and two or three delegates of the community. In the Palatinate the mayor is chairman.

The supervision of instruction is entirely within the hands of the local school inspector. The local board must see to it at the beginning of each school year that all the pupils are supplied with the adopted schoolbooks and stationery. For poor children the local charity board supplies the means for such necessities. The school inspector is chairman of the local board, and he determines the date of the monthly meetings of the local school board, which principally occupies its time with cases of neglect of school. The parents, foster parents, tutors, or masters of those failing in attendance in either the week-day or Sunday schools are summoned to appear before this board, and when the excuses are found to be insufficient (i. e., if the absence is not caused by sickness, storm, death in family, etc.) the case is ready for action. The first time the offending party is simply warned, but for each subsequent neglect during that year there is a fine imposed of



from 10 to 50 pfennigs for each day of absence. If the absence without sufficient cause is prolonged, the case is reported to the civil court (Amtsgericht) and punished according to the higher law with a penalty of imprisonment not to exceed eight days or with a payment to the extent of 45 marks (\$10 to \$11).

Obligatory school attendance begins for both boys and girls with the completed sixth year of age and regularly covers ten years, seven years in the day school (Werktagsschule) and three in the Sunday school. The compulsory law includes not only the native-born children, but also foreign-born children (without regard to nationality) who are living in Bavaria during school age. The causes that may release children from compulsory attendance are—

(a) Private instruction (with permission from the local trustees).

(b) Attendance in a higher public institution of learning or a school for abnormal children.

In order to establish any private institution which is intended to replace, either entirely or in part, the regular public school, permission must first be obtained. This permission is granted by the district trustees, in whose hands rests the supervision of private schools, and who must see that they conform to law. Among 7,173 day schools there were in 1891-92 only 52 private schools.

In order that children not old enough to attend the public schools may receive shelter, support, and care, public nurseries (Kleinkinderbewahranstalten) have been established in cities and in the country. Kindergartens are found in the larger cities for children from 3 to 6 years of age. Asylums for those of a more tender age, from 1 to 3 years, exist in manufacturing towns, and are called Krippen.

In 1891 the number of private nurseries for small children was 179; the number of public nurseries during the same year was 34. The kindergarten is not permitted to become a substitute for the public school; it is not organically united with the elementary school; it can neither give lessons as in the public school nor otherwise encroach upon the public school work; it is unconditionally forbidden to give instruction in reading, writing, and arithmetic. The manner of occupation is so arranged that the children are continually employed at play. Both State and community are awaiting results from the kindergarten.

In certain cities there are also institutions, "Knaben- und Mädchenhorte," which give to children during vacation suitable employment and maintenance and keep them under control; also manual and trade schools for boys (Schüler-Werkstätte) are established. During the school year 1893-94 there were 42 boys and 37 girls attending this class of institutions. The department of the interior has power to decide concerning the introduction of convent schools. Moreover, such schools can not be established without the consent of the people in the community where they are to be located. In the year 1891-92 there were among 13,501 professional teachers 29 monks and 978 nuns. Nuns as

teachers have to fulfill certain prescribed conditions in order to enter upon public school work. No woman can be appointed a public teacher unless unmarried.

Pupils who have finished the fourth public school grade may undertake an examination for the "Lateinschule" and "Realschule." After a six years' course in the "Realschule" and two in the "Industrieschule" comes the "Polytechnicum." The "Lateinschule" has a course of five years, immediately following which is the "Gymnasium," with four grades. A certificate showing that the candidate has completed the course in the latter institution authorizes the bearer to enter the university. He who has passed the examinations in the first three classes of the "Lateinschule" can enter the "Realgymnasium," and after having completed the course of six years and passed the examination called "Absolutorium" has the right to enter the "Polytechnicum."

After seven years' attendance in the common schools and a successful examination, the releasing of the pupil from the public school takes place. Pupils who in examination do not show sufficient attainments, especially if they were negligent in their attendance, can be required to remain in school another year. In order to be released from the Sunday and holiday school, each one must also first attain a certain standing in the annual examinations. The two hours' instruction on Sundays and holidays is, as a rule, held during the early hours of the afternoon. One-third of the time is given to grammar of the mother tongue, one-third to arithmetic, and one-third to nature studies. For written exercises the use of slates is forbidden. Religious instruction is given in the church by the clergy. All persons of the age requiring the attendance at Sunday school are compelled to be present. In place of the boys' holiday school, Munich has maintained since 1877 an industrial continuation school (*gewerbliche Fortbildungsschule*) of nine exercises per week, each lasting an hour.

The Bavarian common school houses are, as a rule, built and furnished to accommodate the children of parents of the ruling religious belief. The religious character of the schools is, as a rule, preserved. According to a ministerial ordinance, however, issued August 26, 1893, there may be established in extraordinary cases schools of mixed religious faith (*Simultanschulen*). The school statistics of the year 1891-92 show that there are 134 of such mixed schools among 7,225 common schools.

The school year in rural schools commences with the beginning of the summer term, generally on the 1st of May; in city schools with the beginning of the winter term, usually on the 1st or 15th of September. The beginning and the end of the vacation are different in the several provinces. The vacation lasts from four to eight weeks. In every week of the school year there are two afternoons free, generally on Wednesdays and Saturdays. On account of local circumstances, an entire day



(Saturday) may be given free. The instruction lasts five or six hours a day, three in the forenoon and two in the afternoon. In the country the school hours during the summer are in the forenoon, and do not exceed four hours. In the cities the arrangement of the school hours is the same throughout all the seasons. In Munich the hours in the forenoon are from 8 to 12 o'clock, in the afternoon from 2 to 4; the first (lowest) grade has twenty-three hours per week, the seventh thirty-two. If during the hot season of the year the daily temperature stands at 77° F. in the shade, the school hours are limited to the forenoon.

School discipline is left entirely in the hands of the teacher. He determines upon and administers the punishment, and is answerable for any excess of punishment. For the prevention of common misdemeanors and offenses and their punishment, there are brought into effect warning, threatening (before the class), reproofs (in private or before the school), and unfavorable report (the report makes known to parents or guardians the standing of their children: I, very good; II, good; III, satisfactory; IV, unsatisfactory. Further punishments are, standing on the floor, placing the offender for a time on a special-punishment seat, setting of tasks that must be prepared at home, keeping indoors during intermission without luncheon (under supervision).

For grosser offenses which imply wickedness of heart, for persistent laziness which has not yielded to other methods, and especially for misleading other pupils, corporal punishment is made use of. For this the instrument is a rod or a switch. All other forms of chastisement, such as boxing the ears or slapping and striking on the head, shaking by the hair, pulling the ears, etc., are strictly forbidden. Visiting beer gardens and theatrical entertainments is for school children only permitted when under the supervision of those to whom they belong. Attending balls (either for dancing or looking on) is unconditionally and without exception forbidden for children during their attendance in the week-day and Sunday schools. Gambling for money and the use of tobacco are also prohibited.

Article 1 of the aforementioned school-endowment law of November 10, 1861, defines the common schools as local institutions (*Gemeindeanstalten*). Mr. Seydel, of Munich, however, defines them as State institutions. Serving in the public school is serving the State, and not merely a locality. The common schools are from every standpoint governmental institutions. The State regulates the training, appointment, and pensioning of teachers; it controls school supervision by means of its trustees, levies and collects the school taxes, provides for the establishment of new schools, and arranges the instruction. The State concerns itself with those interests only which the communities hold in common in the matter of State administration of the common school system, to the extent that it grants to them a representation in the local school boards and yields to them the selection of teachers to be appointed. In former imperial cities (*Freie Reichstädte*) the candi-



dates' names were presented to the provincial government for decision. The legal relation of the community to the public school is not in the sphere of management, but of finances. The obligation of defraying the school expenditure (p. 332), the means needed for establishing and maintaining schools, rests on the community in which the school is located. According to the endowment law, the communities overburdened by assessments received support from the State or the provincial funds.

If the number of pupils in a common school under one teacher exceeds an average of 100 for five years, the community may be required to establish a position for a second teacher. In Munich the maximum number of pupils in a single class is limited to 60.

The school superintendents, in cooperation with the provincial governments, determine the architecture and plans of the new school buildings. The permission for carrying out the project must be granted by the provincial government. The same is also the case concerning the remodeling of existing school buildings. In making plans for the erection of new schoolhouses the locality is especially considered. For each child at least 2 cubic meters of air are required. The heating should be so regulated that the temperature during school hours will not fall below 59° F. The community has to see to the heating and cleaning of the schoolrooms.

In order to increase and facilitate the use of the best objects and appliances for school and teaching, there has been since 1875 in Munich the "Kreislehrmittelmagazin." This pedagogical museum has been more fortunate than the "Permanente Lehrmittelausstellung" in Vienna, which was founded about the same time (1872), or the "Museo d'Istruzione e d'Educazione" in Rome, which was opened in 1874 after the same plan by Bonghi. Both of these institutions have been abandoned.

The instructors in the public schools are divided into: (1) Regular teachers (*wirkliche Schullehrer*). These are appointed to regular life positions and receive salaries prescribed by law. They have not the same rights which State officials have, but they can be removed only for cause or disability. (2) Temporary teachers (*Schulverweser*), who without further legal title are either placed in charge of a school instead of a regular teacher or occupy some vacant position temporarily. (3) School assistants (*Schulgehilfen*) are those who have to give instruction under direction of a regular teacher, who stands responsible for their conduct.

A definite position can be entered upon in about four or five years after passing the State examination; consequently, eight or nine years after graduation from the normal school. Application for appointment and change of position has to be presented to the provincial government by the district trustees. The appointment, as a rule, is to a place within the province, but teachers, as well as other civil officers of the

State, can petition for suitable positions in any part of the Kingdom. On account of the public nature of the service which teachers perform, they are protected by articles 196 and 232 of the national penal code, which secures those serving the State against violence, insult, or slander concerning the performance of their duties. Injuries which a teacher may receive in the discharge of his duty the community concerned must make good when the damage can not be repaid by any other means. The regular teachers, by virtue of the law concerning home, marriage, and residence, acquire with their appointment the right of citizenship in the community where their school is located.

A teacher in active service can not be elected to the office of mayor (Bürgermeister). He is free from being called upon to act in the capacity of justice of the peace or juror (Schöffe or Geschworne). He may accept election to the city council (Gemeindebevollmächtigter) and be appointed district or provincial councilor (Distrikts or Landrat). There are many cases in which teachers occupy such offices. At present four common school teachers are members of the Bavarian Chamber of Deputies; the German Reichstag also has four members who are elementary teachers.

Teachers subjected to military service are mustered into the infantry, the first year for ten weeks, the second for six, and the third for four weeks. In Bavaria, since 1886, a certificate for one year's voluntary service at their own expense is given after passing the last examination in a normal school.

If the teacher wishes to marry, he must apply to the provincial government for an official permit. For the performance of any outside duties for which a teacher is paid (as organist in a church, local secretary, agent, or postmaster, etc.) official permission must first be secured from the district trustees. Such employments as carrying on beer saloons, retail shops, and the like, are expressly pronounced as inadmissible to the position of a public school teacher, even if such a business is in his own dwelling, outside of the locality of the school, and intended to be carried on by his wife or children; service in the office of trustee, as attorneys, notaries, etc., is inadmissible.

The State authorities are the only ones who can pronounce judgment against teachers. The local trustees can warn and the district trustees can reprove, but the provincial government alone can pass judgment on the removal to a less lucrative position, or decide upon dismissal.

For fifty years of service the medal of honor (Ludwigsorden) is conferred upon the teacher. Particularly praiseworthy and serviceable activity is acknowledged by bestowing the silver or gold medal bearing the service cross of the Bavarian crown. Since 1887 teachers have received the service cross or service medal of the order of St. Michael.

The minimum income of teachers in communities with less than 2,500 inhabitants amounts, for instance, in Upper Bavaria, to 880 marks; in more thickly inhabited communities to 1,000 marks. After 5, 10, 13, 16,



20, 25, etc., years after leaving the normal school an increase of 90 marks at each interval is paid by the State from the service fund, so that a teacher, after serving twenty years, has an addition from the Government of 450 marks. In communities with less than 2,500 inhabitants a dwelling with apartments suitable for a family, is to be furnished to the teacher.

Tuition fees (*Schulgeld*), which constitute a regular source of income of the teacher, are to be paid for all in the community who are subject to attendance in school. The tuition fee amounts to 76 pfennigs for a pupil in the week-day school, 25 pfennigs for one in the Sunday school, for three months, which is equal to about 75 and 25 cents a year, respectively. In many communities the tuition fee has ceased and is replaced from the local treasury by means of a tax assessment. That part of the teacher's salary which comes from the community, in cases where monthly payment is not prescribed, is paid, as a rule, quarterly, like the tuition fee. In the large cities the teachers receive better salaries. A teacher's income after twenty years' service amounts (without the addition from the Government of 450 marks) in Würzburg to 2,760 marks, in Munich to 2,700 marks, in Nuremberg to 2,550 marks.

Leave of absence for more than a week is given by the provincial government. If mutual assistance among the teachers in the same community, in case of sickness, for instance, is not practicable, the provincial government must appoint a school assistant, whose support is to be procured by means of contributions from provincial funds. A teacher on sick leave receives his full salary for at least half a year.

Since length of service does not in itself entitle teachers to a pension who on account of some unavoidable disability can not pursue their calling, there has been established by law in every province a pension union (*Gesetzlicher Verein für Pensionierung des Lehrpersonals an den deutschen Volks-Schulen*) which is directed (under supervision of the provincial government) by members of the union. The union receives donations and yearly contributions from State and provincial funds. All teachers are subject to assessments for pension purposes. The initiation fee and the yearly dues are different in the various provinces; for instance, there is to be paid in Lower Bavaria 24 marks initiation fee, and 12 marks annually. The amount of pension paid ranges in the various provinces from 1,000 to 1,400 marks. Besides this, there are in the cities special civil pension bureaus. Hence a pensioned teacher of Munich, after a service of twenty-one years, may receive a yearly income of  $1,440 + 915 = 2,355$  marks. For the support of widows and orphans of deceased teachers there are established societies (*Schullehrer-Witwen- und Waisenunterstützungs-Vereine*) which in the different provinces are differently organized. All teachers have to pay, besides 10 per cent of an entire year's income, an initiation fee of 60 marks and yearly dues up to 30 marks. These unions receive also contributions from the Central Schoolbook Publishing Company. By



means of this relief society the widows draw an average yearly pension of 200 marks; each minor orphan receives one-third or one-fourth of the pension of the mother.

Since 1876 a teacher's widow obtains from the state treasury a yearly income of 180 marks; orphans receive 80 marks each. For the support and education of teachers' orphans an orphans' foundation (Lehrer-Waisenstift), whose property amounts to a million marks, has been established by the public school teachers' union (Bayerischer Volksschullehrer-Verein). Orphans who have neither father nor mother receive 54 marks per year; if the mother is alive they receive 26 marks. In most provinces the teachers have treasury unions for cases of death (Sterbekassevereine). In many places the widows and orphans of teachers receive support from a local pension union; in Munich, for instance, from the private widows' and orphans' aid society (Privat-Witwen- und Waisen-Unterstützungsverein). The widow of a Munich teacher who died in his forty-fifth year, would receive, if she had a 15-year-old daughter and a 17-year-old son, a yearly income of 2,550 marks. Such enterprises, of course, can only be carried on with sacrifices; a Munich teacher pays ever year in taxes, dues, and society contributions an average of 140 marks, or nearly \$40.

## CHAPTER IX.

### EDUCATION IN URUGUAY.<sup>1</sup>

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The Republic of Uruguay, formerly a part of the vice-royalty of Spain and subsequently a province of Brazil, declared its independence August 25, 1825, which was recognized by the treaty of Montevideo, signed August 27, 1828.

The constitution<sup>2</sup> for the new Republic was ratified on July 18, 1830. The Republic, which had in 1892 a population of 728,447, scattered over an area of 72,110 English square miles, is divided into nineteen departments or provinces. The department of Montevideo, which has the smallest superficial area (256 square miles), has a population of 238,080, or nearly one-third of the people of Uruguay. The population to the square mile for the whole of Uruguay is 10.1; for Montevideo, 933.9. The people consist of many nationalities; 70 per cent are native born; the remainder are Spaniards, Italians, French, Brazilians, and Argentines, with very few French and Germans.

The earliest traces of education are attributed to the Franciscan Brothers, who established a school in Montevideo in 1744, and to the Jesuits, who opened the first college, which was closed, however, in 1767.

With the advent of the Republic appeared the public school, which originated from a decree of May 16, 1827, signed by the governor, who ordered the establishment of a school in each of the chief towns of the department, and who created a junta, or body of inspectors for such schools. In 1831 three public schools had been established in Montevideo and two others in the principal towns of that province. In 1839 this number had increased to six in different parts of the Republic, with 400 pupils.

In the year 1847 an institute for public instruction was created, which body established provisional regulations for the governmental schools, formulated methods of appointing teachers, and selected classical text-

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<sup>1</sup>Prepared by Miss Frances Graham French, specialist in the school systems of Northern and Eastern Europe.

<sup>2</sup>Larousse: *Dictionnaire Universel*, v. 15; *La République Orientale de l'Uruguay* par le Comte de Saint-Foix; Buisson: *Dictionnaire de Pédagogie et d'Instruction primaire*.

books. The efforts of this institute or commission, to date of 1831, brought about the establishment of 14 public schools (9 for boys and 5 for girls) with 700 pupils; but, for want of funds, some of these schools were closed later. These numbers increased to 19 public schools with 2,313 pupils in 1862, but the political events of 1863 and 1864 again prevented the development of elementary instruction.

In 1868 Don Pedro Varela established a Society<sup>1</sup> of Friends of Popular Instruction, which had great influence upon the condition of education in Uruguay. In 1877 Señor Varela, who is considered to be the Horace Mann of Uruguay, formulated a general law of education by which public instruction was to be greatly centralized. His system was based upon the best<sup>2</sup> types of schools in the United States, and his aim was to follow American methods as far as possible. It was through his efforts that various text-books from the United States were translated for the use of schools and schoolmasters. According to the law of August 24, 1877, elementary education was definitely<sup>3</sup> organized, a general department for the carrying on of public schools was established, and in each province a committee of citizens, serving gratuitously, endeavored to see that the school law was carried out, while a school inspector had the direct supervision of schools throughout the province.

The Catholic religion is the State<sup>4</sup> religion, and instruction therein is obligatory in all schools, but there is toleration of all religious creeds.

Prior to the presentation of the educational system it may be well to state that the Uruguayan authorities have various reform movements on the tapis, which may lead to modifications of this presentation within the next few years. Following the lead of other countries, some of the well-known educators have been investigating developments in pedagogical science on the Continent, and the articles appearing from month to month in the "*Boletín de Enseñanza Primaria*," organ of the department of public instruction, indicate the introduction of manual and physical training—a graduated series of gymnastic exercises—and the addition of the kindergarten to the school system. Whether these innovations will become a permanent part of the *modus operandi* of the present system remains to be seen.

#### THE SYSTEM OF EDUCATION.

*Establishment.*—The school system of Uruguay, established according to a law of 1877, with modifications at later dates, consists of three

<sup>1</sup>The Oriental Republic of Uruguay at the World's Columbian Exhibition, Chicago, 1893, by Carlos Maria de Pena and Honoré Roustan.

<sup>2</sup>*Boletín de Enseñanza Primaria*, July, 1889.

<sup>3</sup>*La Instrucción Pública del Uruguay en la Exposición Colombina de Chicago*.

<sup>4</sup>*Legislación Escolar de la República O. del Uruguay*, por J. O. Miranda; The Oriental Republic of Uruguay at the World's Columbian Exhibition, Chicago, 1893, by Carlos Maria de Pena and Honoré Roustan.



grades of schools—elementary,<sup>1</sup> secondary, and higher (*escuelas primarias, secundarias, y superior*)—the lowest grade to be established in every locality where there are 50 pupils between 6 and 14 years, the limit of school age (*edad de la obligación escolar*). Within the past two years<sup>2</sup> kindergartens (*jardines de infantes*) have been opened as a kind of preparatory division for the elementary grades, but to date these are very few in number. Education is compulsory and gratuitous in precept, although a study of the subject indicates that fees are paid in certain schools. Parents and guardians are at liberty to have their children educated either in public or private schools (*escuelas públicas y privadas*). The law requires the establishment of normal schools (*escuelas normales*) and school libraries, the giving of pedagogical lectures,<sup>3</sup> and the publishing of a school journal.

Persons desirous of teaching (*aspirantes al título de maestros*) are required to obtain a certificate of qualification (*diploma de maestro*) for such a position except when they are to teach in a private school (*escuela privada*). The programme of study, as required by law, includes object lessons, reading, writing, composition, grammar and rhetoric, geography, cosmography and history, bookkeeping and business rules, the duties of citizenship, arithmetic, elementary algebra and geometry, physiology and hygiene, natural history, agriculture, drawing, gymnastics, and singing, sewing, cutting of garments, and the management of the sewing machine in schools for girls. The secondary schools<sup>4</sup> aim to complete or supplement the studies of the elementary grades, and to prepare for scientific and literary careers. While the secondary schools (*escuelas secundarias*) are free, the examination fees for entrance vary from \$1 to \$2, in accordance with the desire on the part of the pupil to take an elective (\$1) or obligatory (\$2) course of study. A completion of the obligatory course entitles to a diploma of bachelor of science or letters, on payment of 50 pesos;<sup>5</sup> poor students have a remission of these fees, however. The higher schools include the faculty of law and social sciences, the faculty of medicine and its subsidiary branches, faculty of mathematics and its branches. The diploma of bachelor of science or letters is required for entrance to these university studies except for the study of pharmacy, dentistry, and surveying; students intending to pursue these studies are required to pass an examination. Four dollars is required as an entrance fee for superior instruction, and \$150 upon obtaining the degree of either of the faculties.

<sup>1</sup>For a more detailed account of the subdivisions of the elementary (or primary) schools, and of the studies included in the classes leading to the secondary grades, see Courses of study.

<sup>2</sup>Memoria correspondiente al año 1892, presentada á la Dirección General de Instrucción Pública, por el Inspector Nacional de Instrucción Primaria, Urbano Chucarro; Boletín de Enseñanza Primaria, 1890-92.

<sup>3</sup>La Instrucción Pública del Uruguay en la Exposición Colombina de Chicago.

<sup>4</sup>Leyes y Reglamento General de Enseñanza Secundaria y Superior.

<sup>5</sup>The peso is equivalent to 96.5 cents, hence is frequently reckoned as \$1.

A school of arts and trades and a military school complete the school system.

*State control.*—The general superintendence of all the scholastic authorities in the Republic is placed in charge of the department of public instruction,<sup>1</sup> which, created in 1877, has for its presiding officer a minister of the Government (Ministro de Justicia, Culto é Instrucción Pública); for its first vice-president, the national inspector of primary instruction (Inspector Nacional de Instrucción Primaria); for its second vice-president, the director of the normal school. There are four other members appointed by the Government. The duties of both State and local school authorities<sup>2</sup> will be described under Supervision.

*Local control.*—As aids to the State officials are the departmental (provincial) school inspectors, and the school committees, who, through their reports to the central authorities, keep these State officials informed in regard to educational affairs throughout the Republic.

*Maintenance.*—The schools are maintained by the Central Government and local authorities. The Uruguayans consider the education of the masses to be obligatory upon them, hence they set aside a large proportion of the revenues accruing from custom duties, taxation, etc., for the purpose of maintaining enough schools for all practical purposes. To be a citizen of the Republic of Uruguay the person must be able to read and write. It is intended that the schools of elementary, secondary, and superior grades be free to all, and any individual is at liberty to found such<sup>3</sup> schools, provided authoritative inspection is permitted in matters of hygiene, fundamental principles of law, and morality. The State is expected to maintain as many schools of all grades as are required to give the proper instruction to the youth of Uruguay.

#### STATISTICS.

Uruguay had a population in 1892 of 728,447, an enrollment in elementary schools of 67,009, and an average attendance of 51,583; that is, the ratio of enrollment in these lower grades to total population is 9.25; that of average attendance to enrollment is 76.97.

The national inspector of elementary instruction, Señor Urbano Chucarro, presents the following statistics for the year 1892:

Elementary schools.	Boys.	Girls.	Both sexes.	Total.
Public schools .....	76	44	371	491
Private schools .....	106	43	264	413
Total .....	182	87	635	904

<sup>1</sup>This department was a part of the ministry of the Government and foreign affairs until 1884, when the ministry of justice, worship, and instruction was created.

<sup>2</sup>Legislación Escolar de la República O. del Uruguay, por Julian O Miranda.

<sup>3</sup>Leyes y Reglamento General de Enseñanza Secundaria y Superior.

In the city of Montevideo alone there were 343 schools of elementary grade, 69 of them public and 274 private schools.

Elementary schools.	Enrollment (alumnos inscriptos).			Average attendance (asistencia media).
	Boys.	Girls.	Total.	
Public schools .....	25,491	20,462	45,953	34,539
Private schools .....	11,601	9,445	21,056	17,044
Total a.....	37,092	29,917	67,009	51,583

a The totals and individual items, do not always agree, but it is not known wherein the variance lies.

The 904<sup>1</sup> schools had an enrollment of 67,009 pupils, or an average of 75 to each school. In the private schools (escuelas privadas ó particulares) the average number of pupils (la asistencia media de los alumnos) to each school was 80.

Teachers, by nationality, in elementary schools.	Men.	Women.	Total.
Uruguayans ("Orientals") .....	271	890	1,161
Spanish .....	191	60	251
Argentines .....	9	61	70
French .....	70	25	95
Italian .....	80	62	142
Other nationalities .....	46	67	113
Total .....	667	1,168	1,835

Of these teachers (personal enseñante) 1,515 were lay teachers and 320 belonged to different religious communities. In the public schools (escuelas públicas) 638 teachers had diplomas and 241 had none. There were 544 women teachers with diplomas (diplomas de maestra) and 76 without; 94 men with diplomas and 165 without.

Montevideo has a university (Universidad de la República Oriental del Uruguay) and some other institutions<sup>2</sup> for secondary and higher education. The normal school for girls (Internato Normal de Señoritas) gave certificates in the years 1887-1891 to 143 students who were trained for the teacher's profession. A normal school for boys has recently been established. In two years it graduated 44 students,<sup>1</sup> and it had 12 professors in 1892. A school of arts and trades gives gratuitous instruction to 163 pupils. Although a State institution, this school is actually under the care of the national charity and public beneficence commission, and its building is large enough for 600 students. In 1891 there were 227 students enrolled and 46 professors.

The course covers ordinary branches to the third grade and carpentry, cabinetmaking, shoemaking, bookbinding, typography, lithography,

<sup>1</sup> Memoria correspondiente al año 1892 presentada á la Dirección General de Instrucción Pública por el Inspector Nacional de Instrucción Primaria Urbano Chucarro.

<sup>2</sup> Statesman's Year Book, 1894.



silver and tin smithing,<sup>1</sup> telegraphy, drawing, gymnastics, and music. A military college has 8 professors,<sup>2</sup> and 61 pupils between the ages of 14 and 18. Many religious seminaries (seminarios) throughout the Republic have a considerable number of pupils; indeed, it is stated that "more than 4,200<sup>1</sup> pupils are taught there." The university at Montevideo<sup>1</sup> had 668 students during the year 1891, thus distributed: In law, 337; in social science, 176; in medicine, 85; in mathematics, 30. Of these, 631 were natives and 37 foreigners. The professors were 75, viz: For law and social science, 14; for medicine, 23; for mathematics, 19; for preparatory studies, 19. Classed as to nationality, there were 58 natives, 12 Spaniards, 3 Italians, 1 German, and 1 Frenchman. On June 28, 1890, the Government decided to establish a higher school of agriculture (*escuela superior de agricultura*)<sup>3</sup> for the purpose of theoretico-practical study, leading to the title of agricultural expert (*perito agrónomo*). A special commission, called the "*Comisión Directiva de la Escuela Superior de Agricultura*," is to have charge of the work of this school.

#### FINANCE.<sup>4</sup>

*Income (recursos).*—The Government employs one-ninth of its general budget in the cause of elementary education, this proportion reaching the sum of about \$700,000 per annum; and so great is its desire to further the cause of education that it aims to expend still more. Elementary, or, as it is usually called, primary education, is, as heretofore stated, gratuitous and obligatory throughout the Republic, and more, the intention is to have the examinations of all grades of public schools paid for by the State, which furnishes books and all necessary materials for carrying on the schools. The public revenues are derived from direct taxes on property, licenses to trade houses, stamped paper, stamps, import and export duties, port dues, municipal duties in the capital and in the departments or provinces, duties on indirect inheritance, trade patents, etc., the customs duties furnishing the principal revenues of the Republic. According to the law of 1879, a general tax for school purposes is imposed on householders of cities, industrial establishments, banks, and commercial houses, in accordance with the income of these persons or establishments. The payments are required to be monthly except where the establishments are too far removed from a center; then annual payments are allowed. In rural districts a similar tax is imposed, and the funds are turned over to the authorities of the chief city of the province.

<sup>1</sup> The Oriental Republic of Uruguay at the Columbian Exhibition, Chicago, 1893.

<sup>2</sup> Statesman's Year Book, 1894.

<sup>3</sup> Boletín de Enseñanza Primaria, July, 1890.

<sup>4</sup> La Instrucción Pública del Uruguay; Legislación Escolar de la República O. del Uruguay, por J. O. Miranda.

*Expenditure (gastos).*—Each department or province is to report the annual cost of education, the teachers' salaries, house rentals (so that the proper tax may be imposed), the proportion of the general expenditures<sup>1</sup> required for inspection, repair of school buildings, and for purchase of school apparatus. The expenditure for schools in 1892<sup>2</sup> is as follows: Teachers' salaries,<sup>3</sup> \$348,566; rentals, \$130,432; incidentals, \$19,213; administrative purposes, \$29,310; school journal, \$1,975; committees and inspection, \$48,103; kindergartens, \$4,263; normal for girls, \$39,984; normal for boys, \$3,420; for the practice school, \$4,962; library of pedagogical museum, \$2,507; inspector's office, \$15,227. These amounts, coupled with various incidentals, give a general total of \$658,276. The cost of education for each pupil enrolled, as stated in the "Estadística Escolar, año 1892," is \$12.06; for each pupil in average attendance, \$16.95. In 1891 it was \$13.27 for each pupil enrolled and \$18.29 for each pupil in average attendance.

#### SUPERVISION AND ADMINISTRATION.<sup>1</sup>

*State control.*—The general supervision of all the scholastic authorities in the Republic is exercised by the department of public instruction, which, created in 1877, has for its presiding officer a minister of the Government; for its first vice-president, the national inspector of primary instruction (inspector nacional de instrucción primaria), who is expected to visit the schools of the chief cities and towns at least once a year; for its second vice-president, the director of the normal school. Then there are four other members appointed by the Government. The department<sup>4</sup> of public instruction (dirección general de instrucción pública) has general direction of primary instruction throughout the Republic. It takes charge of the administration and direction of the normal school or schools; it supervises the different departmental inspectors,<sup>1</sup> suggesting the best text-books to be used in the schools; it presents the diplomas of the three different grades in accordance with the results of the examinations; it formulates the school programmes, and suggests the best means of reforms in educational matters. The technical<sup>5</sup> inspector of primary education (inspector técnico de enseñanza primaria), whose jurisdiction extends through all provinces, has for his special functions the visiting of public schools to

<sup>1</sup> Legislación Escolar de la República O. del Uruguay, por J. O. Miranda.

<sup>2</sup> Estadística Escolar de la República Oriental del Uruguay correspondiente al año de 1892.

<sup>3</sup> The Uruguayan unit of money, the peso, is equivalent to 96.5 cents, hence is reckoned at \$1.

<sup>4</sup> This department was a part of the ministry of the Government and of foreign affairs until 1884, when a ministry of justice, worship, and public instruction was created.

<sup>5</sup> Boletín de Enseñanza Primaria, Nov., 1889.

study methods of instruction, to suggest to the teachers how greater uniformity can be brought about, to organize and preside over teachers' meetings, to keep the department of public instruction (*dirección general de instrucción pública*) informed as to organization of schools and need of school apparatus, to present to the department, in accord with the national inspector (*inspector nacional de instrucción primaria*), a report on the condition of schools visited, and to present a private report in regard to teachers and their aptitude for the position held.

*Local control.*<sup>1</sup>—Each department or province has a salaried school inspector (*inspector departamental*), and a committee of citizens (*comisión departamental*) serving gratuitously, to superintend local educational affairs. The departmental inspector has for his special duties to ascertain the school population and enrollment of his special division of the Republic; to obtain accurate information in regard to the school buildings, rentals, expenditures, etc.; to preside at teachers' conferences, and to keep the national inspector informed as to the condition of education in his vicinity. He is aided by the local committee, which visits the schools even oftener than the inspector is expected to do. This committee aids him in keeping a chronological record of school affairs. The local officials (*inspectores departamentales y comisiones departamentales*) see that the orders of the central administration are carried out as regards the distribution of school material, text-books, etc. The committee makes its report every fifteen days to the departmental inspector, and he in turn reports each trimester in regard to the progress or needs of the schools. The aim of the local officials is to further the cause of education as far as it is within their power. During the year 1892 the number of visits made by these officials was 2,678; the number of hours given to such work, 7,464; the cost of visits (including railroad, steamboat, and other expenses), \$8,035.

The supervision of secondary and superior<sup>2</sup> instruction (*instrucción secundaria y superior*) is regulated as follows: A council for secondary and superior instruction (*consejo de instrucción secundaria y superior*) has for its presiding officer the official in charge of education in the ministry of justice, worship, and public instruction; for its vice-president (usually acting as president) the rector of the university (*rector de la universidad*). Its members consist of the deans of the secondary sections and of the university faculties (*decanos de la sección de enseñanza secundaria y de las facultades de la universidad*), and an equal number of members elected by a majority of votes, by citizens registered in the university, or universities, who have the degrees of licentiate or doctor, provided such persons are approved by the executive power. These last-mentioned members must be citizens of at least 25 years of age. The length of term is four years. The

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<sup>1</sup> Legislación Escolar de la República O. del Uruguay, por J. O. Miranda.

<sup>2</sup> Leyes y reglamento general de enseñanza secundaria y superior.



duties of the council for secondary and superior instruction (*consejo de instrucción secundaria y superior*) are to formulate general regulations for secondary schools; to approve the university regulations; to regulate university rentals, and to suggest to the executive power the amounts of annual expenditures; to organize the faculties, and to determine conditions of admission for other universities; to organize a body of professors for secondary and superior instruction for the purpose of filling vacancies; to arrange for the inspection of private institutions; to see that the regulations (arranged by law) are carried out; to formulate special regulations for private establishments, so that the studies may tend toward the courses of public secondary and superior institutions.

#### TEACHERS.<sup>1</sup>

*Preparation and examinations.*—By law of 1877 normal schools, one for each sex, were to be established in Montevideo for the proper training of a corps of persons to fill the position of teacher wherever required. By that law and by a later one of 1882, each province was to be allowed to send three persons to the normal school, providing such persons had successfully accomplished the studies of the sixth grade of an elementary school, and, if a woman, she must have reached the thirteenth year of age; if a man, the sixteenth year of age. These special regulations, decrees of January 26, 1882, also required the physical condition to be excellent and required certificates of the provincial committee on education stating the nationality of the persons desiring to enter the normal schools, the nationality, profession, and residence of parents.

In order to appear for the examinations leading to a diploma general regulations required women to have passed the sixteenth year and men the eighteenth. Ten pesos a month and 10 for admission were to be guaranteed for each student, and a stay of one year in the normal was requisite except in case of illness. In the normal for girls<sup>2</sup> (*internato normal de señoritas*), established in the early part of 1882, there are both day and boarding pupils. A practice school (*escuela de aplicación*) is connected with this institution. According to a decree of March 30, 1889, no man over 21 years of age will be allowed to enter a normal school and no woman over 23 years of age.

As soon as the normal student has obtained the teacher's diploma of the first grade (*diploma de maestro de primer grado*) he (or she) is expected to return to the department or province from which sent to serve as teacher, unless by special request he be allowed to continue.

<sup>1</sup>Legislación Escolar de la República O. del Uruguay, por J. O. Miranda. Leyes y reglamentos general de enseñanza secundaria y superior. Memoria correspondiente al año 1892 presentada à la dirección general de instrucción pública por el inspector nacional de instrucción primaria Urbano Chucarro.

<sup>2</sup>Boletín de Enseñanza Primaria, July, 1889.

the studies for the diploma entitling him to teach in the second grade<sup>1</sup> (diploma de maestro de segundo grado). If the student leaves the normal school prior to the close of a year of study he must forfeit 150 pesos if he be a boarder, and one-half of that sum if he be a day pupil. The length of the normal course, decree of March 30, 1889, is two years, in order to obtain the diploma of a first-grade teacher, and of three years for the women and two for the men who desire the diploma permitting them to teach in the second grade. The graduates are expected to teach at least two years; if not, there must be remittal of funds to the State in the following proportions: 10 pesos for day pupils for every month under instruction in the normal, and 30 pesos for boarding pupils.

Classified according to diplomas,<sup>2</sup> in 1892 there were 363 certificated teachers of the first grade; women with diplomas, 544; without diplomas, 165. The reason of this lack of certificated teachers was stated to be on account of overpressure of work among the departmental committees (comisiones departamentales), and the employment ad interim of many men who had not for this reason, or for lack of preparation, passed the requisite examinations. Special courses in pedagogy<sup>3</sup> are given in some institutions for the benefit of persons desiring to be teachers, but who are not situated so as to attend normal schools.

*Appointment.*—The department of public instruction (dirección general de instrucción pública) has the appointing power of teachers after public competition for the position, but in case of a lack of teachers having normal school diplomas the departmental committees (comisiones ó sub-comisiones de instrucción pública) may appoint well trained persons to the positions provisionally. Assistant teachers receive their appointments either through the central department of public instruction or through the local authorities. A teacher's certificate is not necessary in private<sup>4</sup> schools.

*Salaries.*—Teachers<sup>4</sup> in public schools are paid by the State; in private schools they are paid by private individuals or associations. The average pay<sup>3</sup> of teachers is \$35.91 a month. The assistants of the first grade, \$21 to \$25; those of the second grade, \$28 to \$31.66; the directors of the first grade, from \$40 to \$56; those of the second grade, \$40 to \$63, and as high as \$90 for those of the third grade. Lodging<sup>1</sup> is also furnished to teachers, and when possible in direct connection with the school building, or as near as possible to the post of duty. The

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<sup>1</sup>Legislación Escolar de la República O. del Uruguay, por J. O. Miranda.

<sup>2</sup>Memoria, año 1892, presentada por Señor Urbano Chucarro.

<sup>3</sup>Boletín de Enseñanza Primaria, July, 1889.

<sup>4</sup>La Instrucción Pública del Uruguay en la Exposición Colombina de Chicago.

minimum<sup>1</sup> annual salary suggested in 1890 by J. H. Figueira, technical inspector of primary instruction, for urban schools is—

First grade:	
First class .....	\$360
Second class .....	420
Third class .....	480
Fourth class .....	540
Director .....	600
Second grade:	
Fifth class .....	600
Sixth class .....	660
Seventh class .....	720
Eighth class .....	780
Director <sup>2</sup> .....	840
Third grade:	
Ninth class .....	780
Tenth class .....	840
Director <sup>2</sup> .....	1,200

*Teachers' institutes.*—In accordance with a law of May 6, 1881, these pedagogical conferences (*conferencias pedagógicas*) are to be held annually, from the 5th to the 16th of June, in the capital of each province or department. They are for the benefit of both rural and urban teachers. The evenings are to be devoted to the theoretical part, that is, to discussions as to best methods,<sup>3</sup> etc. All teachers of the city are expected to be present at these meetings, so that there may be an interchange of thought between the urban and rural teachers.

During the daytime visits are to be made to the schools of the city, and the inspectors and teachers are to carry on a programme in accordance with the discussions of the evening sessions, thus having a series of object lessons. The committees, departmental inspectors, and sometimes members of the central administration of public instruction aim to be present to conduct the discussions. Prizes are to be given annually to those who have shown the greatest amount of thought and study along the lines designated. The first prize is a diploma of honor, which admits of drawing 40 pesos from the treasury. The second prize is considered as equivalent to an "accesit." The department of public instruction also calls together its inspectors of primary instruction<sup>4</sup> and they form a "Congreso de Inspectores de Instrucción Primaria" for the discussion of better school methods, hours of study in summer and winter, extension of programmes, etc.

<sup>1</sup> Boletín de Enseñanza Primaria, May, 1890.

<sup>2</sup> Directors also have free lodging.

<sup>3</sup> Legislación Escolar de la República O. del Uruguay, por J. O. Miranda.

<sup>4</sup> Boletín de Enseñanza Primaria, October–November, 1890.



COURSES OF STUDY.<sup>1</sup>

Within the last two years, 1890-1892, the effort has been made to have the kindergarten<sup>2</sup> precede the elementary grades in the school system of Uruguay, but very few such schools are yet in existence.

In the elementary grades the pupils have in the first or lowest class, reading, phonetics, formation of words, arithmetic, object lessons concerning color, plants, animals, parts of the body, relative position of objects, etc.; drawing, combination of points and lines; daily singing of melodies; the scale; physical exercises,<sup>3</sup> marching and simple movements; penmanship; moral teachings in form of short narratives; cultivation of fundamental systematic habits, truthfulness, obedience, self-reliance; Christian doctrine.

In the second and third classes there is a continuation of the same studies with steady advancement toward the fourth class, where the elements of geography are added. In the fifth class there is revision of previous studies and a continuation of the same, while needlework is added for the girls. Grammar and composition are found in the sixth class, also mental and written arithmetic; geography showing the form of the earth, its magnitude and grand divisions, with physical and descriptive geography; the object lessons tend toward elementary geometry, physiology, and nutrition. Zoology, with fourteen subdivisions, botany, mineralogy, drawing (geometric), are added to the earlier branches, and the girls commence instruction on the sewing machine. The seventh class continues the branches of the preceding years and adds domestic economy for girls. With the eighth class comes history, as far as it appertains to the South American countries, and a study of the constitution; the elements of scientific study lead the student into physics, astronomy, and plane geometry, always with a continuation of the studies of the preceding years.

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<sup>1</sup>Memoria correspondiente al año 1892, por el Inspector Nacional de Instrucción Primaria; Programa para las Escuelas Públicas de la República; Legislación Escolar de la República Oriental del Uruguay, por Julian O. Miranda; Boletín de Enseñanza Primaria, February-March, 1892.

<sup>2</sup>A report was made upon these schools by Doña Enriqueta Compte y Rique, who investigated the subject in Europe, and who has been appointed as directress of such schools. In the four classes of the kindergarten the aim is to train children between 3 and 7 years of age, to have progressive exercises from class to class. A mixed class is to include children from 3 to 6 years of age, who come in during the term, and who, by degrees, are prepared to enter one of the other classes. The class for children from 6 to 7 years of age is to be preparatory to the lowest grade of the elementary school.

<sup>3</sup>In 1892 the technical inspector of primary instruction suggested a graduated series of gymnastic exercises for the public schools of Uruguay. Fifty-one movements were given, a classification according to sex and age being noticeable. Children from 6 to 9 years of age are to have Nos. 1 to 20, inclusive; girls from 10 to 14 years extend the exercises through No. 38; boys from 10 to 14 take the whole 51 exercises (These exercises are described in Boletín de Enseñanza Primaria, August, 1892, pp. 98-117.)

In the ninth class geography and history tend toward a knowledge of the other divisions of the earth's surface—the voyage of Columbus is referred to and a chronological review of the Spanish rulers, with the wars for independence against the Spaniards, is given; the scientific branches cover mechanics and meteorology, and the term moral teachings includes duties to the family, to society, and toward the governing powers. The tenth class leads the pupil on to rhetoric, with application to practical exercises; algebra and geometry; bookkeeping; physics (including optics, magnetism, and electricity); history, extending to the Greeks, the reforms brought about by religious wars, the French revolution, unity of Germany and Italy; advanced study in physical geography, with illustrative diagrams; advanced astronomy; while ordinary gymnastics develop into regular physical training, which includes twenty-six<sup>1</sup> different phases. Such was the course developed in 1880 for training in ten classes of the school system. Subdivided as to grade, the first covers classes 1 to 4;<sup>2</sup> the second grade, classes 5 to 8, and the third grade, classes 9 to 10.

The laws for secondary and superior<sup>3</sup> instruction, official publication of 1890, state that these grades, similar to the elementary grades, are free throughout Uruguay. Secondary studies are obligatory and optional and there are fees, as heretofore stated, for entrance to either course, but these are remitted in case of poverty. The studies enumerated under the heading "Secondary studies in the university," are arithmetic, algebra, and Castilian grammar (one year's study each); physics, chemistry; natural, universal, national, and American history; Latin, philosophy, general literature, French, English, and linear drawing (each a two years' course), and gymnastics during a five years' period.

The course for the baccalaureate in science and letters lasts six years, and the degree is obtainable only as the student passes the examination in the obligatory course of the secondary grade. This degree is required for entrance into either of the three faculties:

- I. Law and social sciences.
- II. Medicine and its attendant branches.
- III. Mathematics and its divisions.

There are stated fees for entrance into the faculty for the examinations, and the obtaining of degrees of bachelor and doctor; the term *licentiate* is considered simply as a certificate of study which may lead to doctor. In the faculty of law and social sciences, the five years' course for obtaining the doctor's degree (*titulo de Doctor*) includes:

- I. Philosophy of law, Roman, civil, and constitutional law.
- II. Civil and constitutional law (second course), penal and public international laws.

<sup>1</sup> See note 3 on preceding page.

<sup>2</sup> *Legislación Escolar de la República Oriental del Uruguay*, por J. O. Miranda.

<sup>3</sup> *Leyes y Reglamento General de Enseñanza Secundaria y Superior*.

III. Civil law (third course), penal law (second course), political economy, commercial law, judicial proceedings.

IV. Civil law (fourth course), political economy, commercial law, and judicial proceedings (second course), forensic practice.

V. Administrative law,<sup>1</sup> private international law, legal medicine, forensic practice (second course).

The faculty of medicine and surgery has a six years' course; that of pharmacy, three years; of odontology, two years; of obstetrics, three years. The regular medical course includes:

I. Physics, chemistry and pharmaceutics, anatomy and dissection.

II. Add to these medical history, biological chemistry.

III. Physiology, pathological anatomy and general pathology, clinical semeiology.

IV. Medical and chirurgical pathology, therapeutics, medical and chirurgical clinics.

V. In this year obstetrics and gynecology with clinical work and hygiene are added to the studies of the preceding year.

VI. Topographic anatomy and operations, legal medicine, astalmo-logical clinics, medical, surgical, obstetrical, and gynecological clinics, and diseases of children.

The faculty of mathematics has a four years' course in civil engineering, leading to "ingeniero de puentes y caminos," and the same in architecture; a three years' course for geographical engineer; a two years' course as surveyor (agrimensor), and two years' course for contractors and builders (maestro de obras). Regular attendance is expected in whatever course the student enters, complaint on the part of the university authorities bringing upon the students reprimands and at last expulsion.<sup>1</sup>

#### SCHOOL MANAGEMENT AND METHODS OF DISCIPLINE.

A pamphlet presented at the Columbian Exposition in regard to the character of the instruction given in the public schools indicates that it is "educational, rational, appropriate, rigorously graded, and therefore progressive,<sup>2</sup> \* \* \* and above all practical," and that it is "grounded upon solid bases." The "methods generally adopted are either analytical or synthetical, according to the requirements of the subjects included in the school programme;" the child is taught to think and execute at the same time. "As regards procedure, form, and manner of teaching, they are such as are recommended by modern pedagogy, in which intuition and oral instruction take the first place." It states furthermore that "the simultaneous system employed in the public schools enables the masters to teach a great many pupils at the same time, but the number of the latter who receive direct instruction

<sup>1</sup> Leyes y Reglamento General de Enseñanza Secundaria y Superior.

<sup>2</sup> La Instrucción Pública del Uruguay en la Exposición Colombina de Chicago.



never exceeds 30, 40, 50, or 60 per teacher, the general average for the entire Republic being 36 scholars to each master." As the public schools (*escuelas públicas*) are essentially for the people, "both rich and poor alike attend them, without the least distinction being made; thus by the side of a child of the white race another may be seen of the African race, so that in infancy ideas of equality and democracy are inculcated."

In order to carry on an analytical synthetic<sup>1</sup> method of instruction, detailed suggestions are given to teachers as to the best methods to employ with pupils of the lowest grades when instruction is given in orthography and reading. Special regulations are also made as to physical exercises,<sup>2</sup> so that they may neither be too many nor too few for the size and strength of the pupils. The boys and girls should be allowed perfect freedom during the recess, but the teachers should watch over them during rainy days, so that from a hygienic point of view they may be cared for. During the course of the recitations not more than an hour should be allowed to pass by without some form of gymnastic exercise tending to rest both body and mind.

*Discipline.*<sup>3</sup>—A teacher or director is expected to be at the school building one-half hour before the opening of school, so that in case the children appear there shall be some general supervision of them.

No class shall be kept after school hours, no eating of fruit, cakes, etc., shall be allowed during the study hours, and only at recess when there is an expressed wish of parent or teacher, and teachers shall, as far as possible, see that the health of the pupils is not undermined by poor living at home, their influence being exerted (if need be) with the parents or guardians. Another method of keeping up the discipline among the teachers is that in case they absent themselves from their homes during vacations the school authorities be notified. Corporal punishment is not allowable under any circumstances. If the pupil requires any admonition,<sup>3</sup> it should take the form of depriving him of recess, giving additional tasks, detaining the individual pupil after school, and reporting him to the parents. Prizes and rewards may be given for good conduct. Serious lack of discipline may be reported to the provincial school authorities and bring about suspension for a three months' period. Continued infraction of rules may eventually be reported to the department of public instruction and expulsion may follow if that body so decide.

The promotion of pupils is from class to class and grade to grade, but there is discussion as to the proper preparation of the studies in large classes for such advancement, and the technical inspector counsels<sup>4</sup> the establishment of a classification which shall deal more especially with

<sup>1</sup> Boletín de Enseñanza Primaria, July, 1892.

<sup>2</sup> Boletín de Enseñanza Primaria, August, 1892.

<sup>3</sup> Legislación Escolar de la República O. del Uruguay, p. 9. J. O. Miranda.

<sup>4</sup> Boletín de Enseñanza Primaria, June, 1892.

the physical condition, character, and aptitude of the individual pupil. He also suggests a remodeling of the school programmes, so that some studies may not occupy so much of the programme, the object being to bring about better methods of study and a more correct formation of programmes so as to prepare for more practical life. These suggestions are made more especially for schools of second and third grade, and are the result of his investigations in the countries of Europe. Thus it is seen that the educational authorities in Uruguay are endeavoring to simplify the course of study from grade to grade, and reform movements are being discussed in this South American Republic, even as in the United States, the Scandinavian countries, Italy, and elsewhere. The educational reformers of the present day recognize that the schools must prepare for practical life, as well as for the college, and that the body must be trained, and the mind not overtaxed by too many studies.

#### SCHOOL ORGANIZATION.

*Buildings and grounds.*—The schools<sup>1</sup> are reported to be generally well organized in the chief centers of population and under the charge of persons who endeavor to carry out the general regulations. In rural districts there is perhaps less inciting to progress, owing to lack of opportunity for an interchange of thought regarding new methods. Visits from the national inspector will doubtless obviate this difficulty and animate the teachers to renewed efforts. The school buildings in populous centers are well built, often of an ornamental character; the value of school property and furniture amounts to \$778,010.<sup>2</sup> According to a tabular presentation<sup>3</sup> the school buildings throughout the Republic numbered 342 of brick or stone, 132 adobe, and 18 of wood. In 255 school buildings the flooring was of boards, in 5 of stone, in 46 of brick, in 151 of earth, and in 3 of cement. The general effort seems to be, judging from the discussions in the "*Boletín de Enseñanza Primaria*," to adopt hygienic methods, to erect schoolhouses with modern improvements, and to have desks, chairs, etc., suited to the requirements of children of different ages.

*Hours of school and length of recesses.*<sup>4</sup>—During the months of November–March the hours of school (*horas de clase*) in the elementary grades are from 8 to 12 o'clock, with twenty minutes recess (*recreos y salidas*) for physical exercise, going out into the air, etc.; in the schools of first and second grade there may be still two other recreations of ten minutes each. From April 1 to October 31, the hours from 11 to 4 o'clock are considered to be the limit of time. A recess of thirty minutes for gymnastic exercises and two recesses of fifteen minutes each for recreation prevent over fatigue of pupils.

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<sup>1</sup>Memoria correspondiente al año 1892.

<sup>2</sup>La Instrucción Pública del Uruguay en la Exposición Colómbina de Chicago.

<sup>3</sup>Estadística Escolar de la República O. del Uruguay, año de 1892.

<sup>4</sup>Legislación Escolar de la República O. del Uruguay, por J. O. Miranda.

This system was in vogue in 1886 and doubtless still is, as the school legislation of that day seems to be carried out throughout the Republic, as far as can be ascertained by a study of the reports and bulletins issued by the Uruguayan authorities. In 1885,<sup>1</sup> however, Don Jacopo A. Varela presented a bill which suggested the opening of the schools at 7 o'clock and closing them at midday during the months of October 15 to April 15, the necessary recesses being accorded during those hours.

This change was to be made on account of the heated term, but whether this plan<sup>1</sup> was adopted is unknown. The length of vacations is not distinctly stated, but it may be observed that by decree of 1883 teachers are not to absent themselves from their residential district without due authorization, and any unexcused absence at the beginning of a new term will cause them to lose fifteen days' pay.

*Compulsory attendance* (edad de la obligación escolar) is, as heretofore stated, between the ages of 6 to 14, and failure to carry out this obligatory attendance causes a fine of from \$12 to \$24.<sup>2</sup> A decree of January 11, 1882, reads, however, more explicitly. In the places where there are schools<sup>3</sup> of first grade the pupil is expected to attend until the completion of the fifteenth year, unless prior to that he has mastered the studies of classes 1-6, inclusive. In cities, towns, and villages where there are schools of the second grade the pupil is expected to complete the fifteenth year or to indicate that he has completed classes 1-8 of the programme.

*The school supply*<sup>4</sup> may be considered as ample in the best populated communities, for the law explicitly requires the opening of school libraries; the text-books are, many of them, translations from the best in use in the United States; the school furniture, material, and appurtenances as exhibited at the Columbian Exposition (either by photograph or by model) include a graduated series of settees, bookcases, blackboards, compasses, rules, numeral frames, charts, apparatus for teaching the metric decimal system, wall maps, and a general collection of apparatus used by the pupils of public schools.

#### SUPPLEMENTARY INSTITUTIONS.

*Libraries and museums.*<sup>4</sup>—Recognized as instrumentalities of thought are the library and pedagogical museum (Biblioteca y Museo Pedagógicos) founded in Montevideo by the minister in charge of public instruction, which "establishment forms a permanent exhibition, not

<sup>1</sup> Las Horarios Escolares, por J. A. Varela.

<sup>2</sup> Boletín de Enseñanza Primaria, June, 1892.

<sup>3</sup> Legislación Escolar de la República O. del Uruguay, por J. O. Miranda.

<sup>4</sup> La Instrucción Pública del Uruguay en la Exposición Colombina de Chicago; The Oriental Republic of Uruguay at the World's Columbian Exposition, Chicago, 1893, by Carlos Maria de Pena and Honoré Roustan.



only of the scholastic material employed in the schools of the country, but also of that used in foreign countries, so that the masters may apply the graphic method in their teaching, and national and foreign manufacturers may exhibit the products of their industries." The building, ornamental in its construction, includes didactic, theoretic, encyclopedic, geographical, and historical departments. There are also departments for school hygiene and for a kindergarten exhibit, a workshop, a public lecture hall, a lecture and working room, a department for catalogues, and director and secretary's offices. Three galleries contain exhibits of school furniture, material and appliances, wall maps, etc. Public libraries are usually found in the large towns or cities of the provinces, and in Montevideo the National Library possesses 21,000 volumes and 2,500 manuscripts, besides engravings, photographs, and maps. The "Archives" are specially devoted to the presentation of records, ancient writings, and documents pertaining to the early history of Uruguay. The National Museum includes 24,226 specimens, subdivided under archæology, numismatics, history, paleontology, geology, botany, mineralogy, fine arts, and industries. The zoological specimens number 13,741; the next in point of number is that of numismatics, 4,201.

*Societies.*<sup>1</sup>—The Society of Friends of Popular Education (*Sociedad de Amigos de la Educación Popular*), founded by José Pedro Varela, gave the first impetus to the present school system in 1868. The first school established by this society was called "Elbio Fernandez," in honor of one of the founders. The society caused the translation of many text-books in use in the United States, for the benefit of schools and teachers in Uruguay. The educational ideas diffused by this society and by its head, Señor Varela, brought about a reform in school methods and was the means of organizing the administrative division of school affairs. The Patriotic Educational League (*Liga Patriótica de Enseñanza Popular*), in Montevideo, has for its object the promoting of the interests of all grades of instruction throughout Uruguay. Its first object was to establish farm schools and agricultural schools for the rural population, but this was eventually given up and the directive, executive, national, and departmental committees decided upon the foundation of a national college. The first report of the "*Liga Patriótica*," published in 1890, presented 245 pupils; of these, 182 were day pupils.

The plans so far include manual training according to the Swedish methods; school battalions as a means of civic education in keeping with the colleges of European countries; school savings banks as a means of inculcating habits of economy and thrift. Other societies mentioned are the "*Ateneo de la Mujer*," the "*Ateneo Militar*," the "*Con-*

<sup>1</sup>The Oriental Republic of Uruguay; *Boletín de Enseñanza Primaria*, December, 1891; *Memoria de la Liga Patriótica de Enseñanza*.

federación Científica Literaria,"<sup>1</sup> the "Tiro y Gimnasio Nacional," and the "Société Française d'Enseignement,"<sup>2</sup> which last, founded in 1883, has as its object the founding of a French lyceum in Uruguay. The object of the French society does not seem to have been carried out, however, although 35,000 francs (\$7,500) were collected and ground has been bought for the purpose.

*Special classes.*—A decree<sup>3</sup> of February 16, 1891, established a class for the deaf and dumb (designated as an Instituto de Sordo-mudos) in connection with a boys' school of secondary grade in Montevideo. This is reported in 1892, by the national inspector of primary schools, Señor Urbano Chucarro, as a good beginning. He states, however, that instruction of the deaf and dumb has not yet reached a definite form in Uruguay. The pupils under instruction during 1891-92, numbering 25, passed a creditable examination in reading,<sup>4</sup> writing, arithmetic, and other branches of knowledge. Special effort for the care of the blind is not reported.

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<sup>1</sup>The Oriental Republic of Uruguay at the World's Columbian Exposition, by Carlos Maria de Pena and Honoré Roustau.

<sup>2</sup>La République Orientale de l'Uruguay, par le Comte de Saint Foix.

<sup>3</sup>Boletín de Enseñanza Primaria, February, 1891, August, 1892.

<sup>4</sup>Memoria, correspondiente al año 1892.





## CHAPTER X.

### CHILD STUDY.

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#### INTRODUCTION.

Prof. Stephan Waetzoldt, of Berlin, in reporting upon the educational exhibit in Chicago, makes this remark: "What we now call history of education is not a history of facts, but of systems and theories." He then goes on to urge the collection of apparently insignificant facts, such as school reports of single schools, which would be valuable material for the future historian. Something like this is alleged of education itself. A large number of teachers claim that in education we start from preconceived ideas, and neglect to consider the actual condition of the child that is to be educated. While some follow theories and presume the facts upon which they should rest, others reject all theories and claim that educators must first find the facts in order to deduce underlying principles and build theories on them. Following the lead of German university professors, a school of zealous workers has sprung up in America who have made it their object to urge the study of psychological phenomena in children, and to study them with the view toward furnishing the world with required facts for the better teaching and training of the young. These educational workers are found among all grades of teachers, from the elementary school teacher to the university professor. They variously call their science experimental psychology, paidology, or, in plain English, child study. They represent a movement which is by no means insignificant; hence a few authoritative utterances from the leaders of the movement will, it is hoped, be welcome.

A national society was formed at Chicago at the time of the educational congresses under the name of the American Association for the Study of Children, and Dr. G. Stanley Hall, the pioneer of child study in this country, was elected president. In the following summer (1894) a department of child study was formed by the National Educational Association, also under the leadership of Dr. Stanley Hall. These investigations are thus organized upon a national basis and recognized also as having an important bearing upon the work of the public schools of our country.

In view of the intrinsic importance of the subject and the widespread interest awakened, a survey of its history in this country, its scope and methods, and the claims of its leaders as to its importance is here given in the form of extracts from addresses, reports, etc.

#### CHILD STUDY AS A BASIS FOR PSYCHOLOGY AND PSYCHOLOGICAL TEACHING.

[Abstract of an address by G. Stanley Hall, president of Clark University, Worcester, Mass.]

The history of the scientific study of children began in this country in 1879, when four kindergartners in Boston, acting under Mrs. Quincy Shaw's lead, took three or four children at a time aside and endeavored to find the contents of their minds. The results of this work were published in the *Princeton Review* in 1880. The work showed great gaps, so great that it was dubbed "a study of ignorance of children." It came out that the primers were made for country children, while the great bulk of children are city born. This line of work has since been carried on into the college ranks. As the study has already thrown light on common school problems, so, it is hoped, like aid will come to college problems.

Another line of study is the measurement of children. More children have been measured in the United States than elsewhere, but the results have not been worked over so well here as in Europe. It has been found that children grow tall in spring and stocky in fall; further, that different parts of the body have different periods of best growth. Times of physical growth are also times of mental growth in acquisition, though children then are not able to systematize well. Hence, in time of great acquisition ease up the constraint of methods; take the child to the World's Fair, but don't ask him to explain it all.

A third line of study is of exceptional and defective children. "Study the child" is becoming "Study this child." The method enthusiast prides himself on results gained from stupid children; but we must let the bright children set the pace. I would rather have a teacher who knew nothing of methods, for defective children, if he but knew the childhood of distinguished men, to put in the model school that I should like to see established. An experiment was made a few years ago in Paris which showed that methods adapted for bright children enabled a class of average boys to complete the six years' course of the lycée in a little over two and one-half years, although no extra time was given. By such means I am confident we can work twice as fast with the brighter half of our classes. This is not theory; I have tried it.

A fourth line of child study relates to health. The modern school is a tremendous engine to drive the child organism. Five hours a day, five days in the week, and nine months of the year—history shows no other such test of child-nature. It is irremediably bad if the child's health or system is in any way seriously impaired; better let children grow up in idyllic ignorance than vitiate their health.

These are four lines of child study; now for two points further. First, let us look ahead and see what is to come of it. As I see it, there are two movements in the air at present. One of these, shown in art, government, or other lines, is a "back to nature," even to primitive peoples and ways. This tendency is especially in place in our country, which is without historic background; we are freer to accept and use a good idea when found. Wagner, it is said, got his fundamental movements from the Hungarian folk songs; and he is reported to have said the next great composer would make his fame by working over the negro melodies of America. So, the school of the future must be based on original child nature. The other movement is engaged in an effort to reconstruct the grammar school course. To do this work well there is needed a union of teachers who can tell what the people will stand being taxed for and how much can be put in a course, with scientific men who can give insight into wider relations. But both of these movements are parts of a far larger one, which desires that school hours, curricula, exercise, buildings, etc., shall all be reconstructed in accordance with child nature, the true norm, in order to obviate the dangers inherent in our present great machine. If the showing of bad bodily results made by investigators of European schools shall be found to hold good of our schools also, public opinion will no longer give them the support they now have. Our public school system is our pride; we must keep it efficient if we wish it to retain confidence. (From Proceedings of International Educational Congress.)

#### CHILD STUDY AS THE BASIS OF PEDAGOGY.

[Abstract of a paper by William H. Barnham, Clark University, Worcester, Mass.]

I do not deem it necessary to maintain the thesis involved in my subject, namely, that the study of children is the basis of pedagogy; for if there be any pedagogy, what else could be the basis of it? I wish, rather, to recount very briefly some of the pedagogical principles that seem already to have been settled by child study. And when I speak of the study of children, I use the word in the broadest way. Teachers and psychologists are by no means the only ones who have studied children. Some of the most important studies have been made by physicians, neurologists, and anthropologists. The child study, upon which pedagogy is based, should include every scientific study, wherever made, relating to a child's mind or body. This paper will be confined chiefly to a few principles that result from psychological and anthropological study of children.

The first pedagogical principle settled beyond controversy by this broad study of children is that no development is possible without the functioning of the nervous system. This is no barren truism, for it follows that the laws which express the development and activity of the nervous mechanism must determine pedagogical principles.

Among these laws, one of prime importance is the following: The fundamental is developed before the accessory. This is best seen in the development of the motor centers. The centers that control the muscles of the trunk, of the shoulders, and of the limbs are developed first; those that mediate the delicate muscles of the fingers



and the vocal organs are developed later. The same is true in general. The simple and fundamental processes are first; the fine, delicate, and complex processes come later.

This law of the child's nervous system is the basis of a most important educational principle. First the fundamental; then the accessory. This applies not only to the various forms of motor training—manual training, gymnastics, and the like—but, in general, first a strong, healthy development of the fundamental nervous processes is necessary; then may follow more delicate and complex acquisitions. A reversal of this order, the imposition of delicate, subtle, and complex occupations in the kindergarten or the primary schools, may please parents and committees, but it is contrary to a law written in the child's nerve centers.

Again, all parts of the body do not develop at the same time. Each organ has its peculiar nascent period. Moreover, there is a close relation between the function of any organ and its development, and the highest degree of skill in the use of an organ can often be acquired only during the period of growth. The acquisition of language, for example, is probably a case in point. If, during the period that the vocal organs and the corresponding nerve centers in the brain are developing, attention is given to educating some other part which is not ready for training, twofold loss is likely to be the result—waste of energy or injury in case of the latter, loss of opportunity in case of the former. So, too, if manual training be neglected in early life, during the nascent period of the motor centers, great skill can seldom be attained afterwards.

Corresponding to the nascent periods of the motor organs are the periods of interest in the child's mental growth. This year your boy has the collecting mania; next year it will be baseball or the secret language; a third year it will be the debating society; or he may be hunting or stuffing birds and snakes. These interests are sacred. Some of them should be turned into new channels; others should be made permanent, as a part of character. But, in all cases, the time of interest is the time of opportunity; and here opportunity seldom comes twice. Special studies have shown the sequence of children's interests. This must be considered in determining the course of study; for, as Professor James puts it: "To determine the moment of instinctive readiness for a subject is the supreme duty of every educator."

Psychological studies have also brought into prominence the active side of child nature, and one of the most important movements to-day is the tendency to emphasize the active side of education. Pedagogy based upon child study seeks to use all the light that comes from the various fields of psychology, and with that light to appropriate all that is best in all the various systems of education. It admits with Pestalozzi the fundamental importance of sense perception. Things before words, the concrete before the abstract, clear perceptions before the working over concepts. With Herbart it maintains also that sense perception is not enough. There must be mental assimilation and the study of causal relations, but also there must be the expression of thought; and, more than Pestalozzi or Herbart, it places emphasis upon the active, the productive, the creative processes in education. (From Proceedings of International Educational Congress.)

#### A PLEA FOR SPECIAL CHILD STUDY.

[By Prof. W. L. Bryan, University of Indiana, Bloomington, Ind.]

I wish in substance to make a plea for one special kind of child study, namely, that in which methods already well developed and tested in the laboratory may be carried out under the direction of experts upon large numbers of children.

This is not the only kind of child study profitable. Individual teachers everywhere, though little skilled in scientific methods, may gain great advantage for themselves by observing the children under their charge; and if the records of such observations be brought together into competent hands, important gains may be made for psychology. The proper direction of such work is at present of the utmost importance. This is the natural history of childhood, and it has certain values of its own which can not be replaced by anything else.

I wish to urge the timeliness of supplementing such and all other methods by methods more systematic and strictly scientific.

In the last quarter century we have had a vast amount of work in experimental psychology. The bibliography of the subject is growing at the rate of much more than one thousand titles each year. More than a dozen laboratories have been established in the United States within the last half dozen years. We are, in brief, on the crest of a great social movement for the regeneration of psychology.

It is a fact, however, that from the highest standards the vast and invaluable work so far done has been largely of a preliminary character. This is, in part, matter of course and a necessity. Questions must be discovered; one sagacious question—one reasonably definite ignorance—is worth more than a world's fair full of blind "Outlines for child study."



The laboratories of the world are engaged almost exclusively in this kind of work. It does not turn out tracts for popular enlightenment. It furnishes few recipes for teachers or preachers or mothers. It supplies few satisfying generalities to philosophy. Its outlay of published results look to the uninitiated like a mass of tedious scraps. From the standpoint of those engaged in it, this planning of questions, apparatus, and methods is for the most part not intended to furnish general laws of conscious life. Such work is essentially preliminary. The ingathering of results must follow after.

But those who have been working at the foundations in experimental psychology have not been blameless, or at least their accomplishment is not blameless. I think experimental psychology has been peculiarly free from this danger.

But I can not disguise my fear that the preliminary part of the work of which I have spoken has engrossed too large a share of attention, to the peril of our scientific and educational standing.

We promise a science of conscious life. As other sciences have traced the development of the physical world, we promise to supplement this by giving the natural history of conscious life from its darkest beginning to the highest achievements of man. But we shall be false to all our promises, and we shall turn the confidence and sympathy which has endowed chairs and built laboratories into derision and rejection, if we confine our science to a little round of tests in the laboratory.

I believe that the time is fully ripe for a rapid advance in the ingathering of results. The most important things are ready, the things that can not be hurried. There are many plans scientifically developed. There are men who have that knowledge and training which can not be extemporized, and who are eager to work. But there must be organization and there must be money. The thing most in demand is endowed research in the field of child study. What we want is a millionaire. Or, perhaps, it can come without the millionaire. The people of this country love their children. If the scientists and educational leaders whose representatives are here can make the people understand how deep a matter we have in hand, how far into the life of their children, and of all the after world this work tends, perhaps, then, from many quarters money will flow in to make possible, under the best scientific direction, a national bureau for child study.

Suppose such a bureau established, under the direction of our one greatest master, manned by a corps of experts in anthropology, in child diseases, in the various departments of experimental psychology, in the mathematical treatment of results, and the like. Suppose, then, under the direction of these, a little Gideon's army of trained agents working everywhere in schools, high and low, in the country and in the city slums; suppose, finally, that an innumerable army of teachers and mothers working as they were able under this direction; whatever sane prediction we should make to day of the outcome of such an enterprise for psychology and all the sciences and arts dependent upon it, would in a few years be surpassed. (From Proceedings of International Educational Congress.)

#### SCOPE AND BEARING OF CHILD LIFE STUDY.

In the introduction to his concise but very complete monograph on the Psychology of Childhood, Dr. Frederick Tracy describes the bearing and methods and scope of the study of child life as follows:

The comparative method of study has commended itself to all the sciences in modern times by its fertility in results, and is now being employed extensively in two principal directions, viz, the analogical and the genetical. The philologist, for example, compares his own language, on the one hand, with other languages (in the search for analogies), and on the other avails himself of all manuscripts, inscriptions, etc., which show him his language in its earliest stages, and help him to determine by the operation of what causes, and according to what laws, it has developed from its original crude and inefficient state to its present polished and complicated condition, and similarly with other sciences. In the case of psychology the application of the comparative method has led the investigator to the observation of mental manifestations in the lower animals; in human beings of morbid or defective mental life, such as the insane, the idiotic, the blind, deaf and dumb; in peoples of different types of culture, ancient and modern, savage and civilized; and finally to the study of mental phenomena in their genesis and early development in the life of the child. If the child is only the adult in miniature, and if society is only the individual "writ large," then in studying the infant mind we are approaching a vantage ground from which we may catch a prophetic view not only of psychological but also of sociological phenomena.

When we compare the young child with the young animal, we can not fail to be struck by the apparent superiority of the latter over the former at the beginning of life. The human infant, for example, requires weeks to attain the power of holding

his head in equilibrium, while the young chicken runs about and picks up grains of wheat before the first day of his life is over. This, however, carefully considered, is a token rather of the superiority than the inferiority of the human being. The higher you ascend in the scale of being, the more varied and complex is the environment in which the individual moves, and to which he must adapt his movements. This adaptation requires, on the physiological side, a cerebral and nervous development, and on the psychic side a mental growth, for which time is an absolute necessity. Animals go on all their lives doing the same simple things, which require a minimum of mental activity and which, by dint of constant repetition, produce physiological adjustments that become at length hereditary; so that phenomena which seem to the casual observer the index of an astonishing degree of mental advancement, such as the "scampering" of the young chicks on a certain peculiar call of the mother, are really at bottom little more than the response of an organism, adjusted by heredity, to the action of an external stimulus.

The longer and more arduous the journey, the more time is required for preparation; the more complicated the art to be acquired, the more extended is the period of apprenticeship. So the child, having an infinitely grander life before him, and infinitely more exalted, complicated, and difficult operations to perform—mental, moral, and physical—requires a longer period of tutelage than the chicken, which on the first day of his life scratches and pecks, and to the end of his existence makes no advance upon these simple operations. The young animal, before the end of the first day of his life, does what it takes the child a year to accomplish; but the child of two years does what the animal never will accomplish to the end of his days.

The object of the present essay is to discuss infant psychology. When and how do mental phenomena take their rise in the infant consciousness? How far are they conditioned by heredity, and how far by education, including suggestion? What is the nature of the process by which the automatic and mechanical pass over into the conscious and voluntary? These are some of the questions to which the following pages may help to furnish an answer. That they may do so, it has been thought best to gather together, so far as possible, the best work that has been done in actual observation of children up to the present time, arrange this under appropriate headings, incorporate the results of several observations made by the writer himself, and present the whole in epitomized form, with copious references and quotations. The inquiry proceeds along the line usually followed by psychologists, and treats the mental endowment, from the genetic point of view, in the following order: Sensation, emotion, intellection, volition; child language, on account of its paramount importance, being treated in a chapter by itself. It was intended at first to add a chapter on the moral nature of the child, but as the work progressed it became more and more evident that to treat this important phase of child life adequately would require not only more space than is at our disposal at present, but an advance into later stages of life than are embraced in the present work, which is intended only as a manual of infant psychology in an approximately strict sense of the words.

I can not forbear calling attention in this place to one great general principle which is so constantly illustrated in the child's mental life that it may be considered universal. It might be appropriately named the principle of transformation, and explained as follows: Every mental phenomenon passes through a graduated ascending series of development. At first the physiological predominates, consciousness is at a minimum, and the so called mental phenomenon would be more accurately defined as the reaction of the nervous system to external stimuli or the organic conditions. For example, the child cries at intervals from the moment of his birth; but at first this cry is independent of his will, and possesses scarcely any mental significance, for it is made without cerebral cooperation, and, as in the case of microcephalic infants, even when the cerebrum is entirely absent. Later the mental aspect becomes more prominent. When the intellect and will have become sufficiently developed the child directs his attention to the act, makes it his own, and performs it voluntarily. The process perhaps has not changed at all to outward appearance, but when viewed on the inner side it is seen to have been completely transformed in character; and one of the most difficult tasks for the psychologist is to determine the when and the how of this transformation.

The exact time at which each psychic activity makes its appearance is perhaps of less importance than the order of the various activities; yet in order to ascertain the latter the former must be carefully attended to. Hence both absolute and relative times receive considerable attention.

#### PAIDIOLOGY: THE SCIENCE OF THE CHILD.

There has never been a time in the world's history in which children have been studied and cared for as at the present. The different phases of the child's life are being looked into more minutely day by day, and his protection and welfare are becoming the study of people in every branch of life. Parents are observing and



noting the doings of their children, and marking down facts that in time will be of more service to those who have to do with the child than one can calculate. Our colleges, too, are beginning to enter into this work, for they are putting into their courses of study as a part of the work in philosophy, in psychology, in pedagogy, that of child study. They are coming to see that the child is worthy of their attention. True, not many colleges have work in this, and those that do have, put it under some existing department, and for the most part it is a minor subject, yet the small beginning is sufficient to show that the work has taken a start, and will grow as the years go by. The normal schools, also, are entering into this subject and in time will do good work in it. I do not know of any high school that has work in child study, but I am assured that in the future they likewise will wheel into line.

All this work is good, and it is true, perhaps, that child study is necessarily a part of the work of the departments of philosophy and psychology, and, of course, its application properly belongs to pedagogy; and physiology, biology, anthropology, and, it may be, other sciences will each claim a portion of this field. But this is not enough. We must take a step farther. This work may be very well in these separate departments, but there never can be a true study of the child till there is one department in which the whole center of thought will be the child, and in which no other subject will be considered of more importance and of more value than this. There must be a centralizing of all the work done by the other departments upon the child into this one department. In this all attention must be focused upon the child, and whatever else is studied should be only in so far as it has bearing upon the study of him. Such a department can have its specialists, its own particular and necessary apparatus, and its lines of research work. Its work for the most part must be of a purely scientific character, leaving the application of its results for the work of other departments and the arts of life.

I have elsewhere suggested the formation of such a department, and used for it the term *paidology*. *Paidology* claims for itself the privilege of collecting the data in the field, classifying it, and making new investigations. Its idea is to devote all its attention to the child alone, pursuing lines of work either directly bearing upon the child or necessary to a better understanding of him. Just as there is a science of chemistry, of mathematics, and the like, so there may be a science of *paidology*. There is great need for such a department, and it will not come any too soon. Yet it is coming just as surely as anything can be predicted for the future. The very fact that various departments of college have found themselves compelled to take up work in child study proves that there is growing up a desire to study and to know the child. It seems that the time will come when no other science will furnish more data for practical application than will *paidology*. No other science will do more for the world, because no other will have a more important subject to work upon, for the child is the most worthy and the most precious object of regard.

One concrete example may be given of what a study of children may accomplish. In a treatise on the development of the voice in children (*Evoluzione della Voce nella Infanzia*, Adriano Garbini, Verona, 1892) the author states that after a careful search he has found nowhere a treatise upon the compass of the voice of children from 3 to 6 years of age. He says that the music which has been written for children of this period—kindergarten songs and the like—is either wrong in using a compass not at all suited to the voices of children of these ages, or quite contrary to every law of infantile physiological pedagogy and of musical æsthetics. If we add to this the idea that is being advanced now, that the young child as found in the kindergarten is not yet fully able to make the finer and more delicate movements, as some of those of the fingers, and the constant attention upon work demanding such movements is a very great strain upon the child, then it is true that the work of the kindergarten very much needs overhauling. It is not claimed that *paidology's* work must be the ascertaining of such facts concerning the child, let them be applied wherever they may. Garbini thinks that this music, so faulty and injurious to the child, is the result from failure to study individual children, as he has done. Whether we accept his results or not we must grant that his work will do more toward bringing about a study of the compass of the voice of children from 3 to 6 years of age than all the works prior to his investigations, because now he has opened the way and others are bound to follow him. Such investigations must result in vast good to the child.

My especial task just now is to work out a laboratory course in *paidology*, and I am far enough along to see that such is possible. Most certainly such a course will be quite different from that in physics or in chemistry, and even in psychology, just as the child shows so many sides for examination. It may not be a very full nor a very great course at first, as much time is needed to bring it into fair shape. I do not expect to complete this in a year, nor in two years. No such course in any subject can be created in a day. Yet, with the opportunity of another year's work in a laboratory with the child, I hope to arrange an outline sufficient to give young men and young women in college some insight into the life of the child. This cer-



tainly will be a very small side of paidology, and not the most important side, perhaps, but it will be a very interesting part of it. (Worcester, Mass., Oscar Chrisman, in *Interstate School Review*.)

In our department here at the Stanford University we are devoting a good deal of attention to the study of children. The department of education was one of the first to be established in the university, and from the first we have had a little experimental school connected with it where various lines of investigation can be carried out. This little school has the same relation to the department that an experimental farm would have to the department of agriculture. The school includes a kindergarten, a primary grade, and a lower grammar grade. It is held in the university buildings and is supported by the university funds, as any other laboratory would be. The teaching is done by instructors in the department of education or by advanced students in the department who wish to carry out some line of investigation. Records are preserved showing the physical development of the children from month to month, together with their development and power of expression along various lines, and the development of special lines of intellectual and physical activity. It would be truer to call the little experimental school a station for preserving and recording phenomena than an experimental station.

In addition to this work we are carrying on various lines of statistical study covering this same field. During the past two years we have carried on extension courses with the teachers of the cities of Oakland, Alameda, Santa Cruz, Santa Rosa, San Francisco, and Stockton, and in connection with these we have gathered wide ranges of data bearing on various phases of the child's development. We have measured 6,000 children in Oakland and have collated the results; more than 15,000 pictures drawn by children have been collated; 1,200 children have been tested as to color, choice, and color combinations; 37,000 definitions by children have been tabulated, following Binet's suggestions; more than 1,000 papers on theological beliefs have been examined and generalizations worked out; 2,500 papers on early historical notions have been worked up, with as many more each on the subjects of simple observation, generalization, and inference; 3,000 descriptions by children of unjust punishments suffered and as many of just punishments received; 6,000 papers gathered on special phases of children's rights as seen by themselves; and 2,000 papers on children's fears. Besides this large quantities of material have been gathered and partly interpreted bearing on children's plays, children's superstitions, children's sense of form, the development of the ideas of sex in children; children's poetry and children's imaginary companions. (Palo Alto, Cal., Earl Barnes, in *Interstate School Review*.)

I. Suppose the outcome of the current movement for systematic child study be "merely physiological," shall educators ignore it or discourage it?

Look over the situation. Read Dr. Burnham's admirable résumé on "School hygiene" (*Pedagogical Seminary*, Vol. II, No. 1), on "Mental and nervous fatigue," on "Period of growth," on "Sanitary schoolhouses," on "School desks," on "Period of study," on "School diseases," etc.

Read Hertel's classic "Overpressure in the schools" (*McMillans*, 1885), and, if you read German, Key's "Schulhygienische Untersuchungen," the record of the official investigation of 17,434 school children in Sweden.

Look up the modern literature of fatigue and its relation to insanity, for which you will find references in Dr. Burnham's article.

Read, for example, Cowles's monograph on "Neurasthenia" (Boston, 1891), and, if possible, Mosso's invaluable "Ermüdung" (Leipzig, 1892).

To read on a little way into this vast literature of school hygiene must bring home to you that children take their bodies to school—lungs, intestines, blood, backbone, nervous system—that the school as it exists proceeds for the most part in willful ignorance of the conditions which these and other organs demand for health, and that as a matter of demonstrated fact the school is seriously attacking the physical vitality of the race.

When you have seen these things, what is it that you will do? You are not a physician. You can not be expected to know everything. You have already a system of education or a plan or a skill or an ideal which seems to you good. Your thought is already happily engrossed in some noble spiritual idea.

Do not deceive yourself. On the one hand are the sciences of help, with much of priceless value already found and eager to push further for the saving of the children. On the other hand are the children in need, languishing in body, and therefore in mind, falling into miserable half existence, failing to attain the fullness of life which is possible for them. And between these stand you, the "educator." Your position is such that you can keep the help from the children or you can hasten its coming to them. You can retard or you can cooperate with those who are competent and eager to help. You can retard or hasten the day when expert hygienic examination of school buildings and children will be as universal as examination of children's memories now is.

"Physical examinations could not arrive at the Golden Rule." No. But He who spoke the Golden Rule went about healing the sick. The philosophic asceticism which would withdraw from and ignore and despise the body is not of Christ.

II. Is systematic child study necessarily merely physiological?

1. Is there in fact or in possibility a child psychology differing in some important respects from the psychology of your individual, educated, philosophical self? Are children to be observed at all in developing such a psychology? If you observe children at all, how will you do so, except by taking notice of some part of their bodies or some of their motions?

2. If it is worth while to observe children at all, their faces, their motions, their speech, why not observe two children—three, ten, ten thousand? If it is worth while to observe children (1) casually, (2) storing up the things observed in memory for (3) future reflection, why is it not worth while to (1) observe carefully, with all possible care, with all the precision which the development of science has taught us to employ; (2) and why should we not record the observations upon paper, or if possible by some of the automatic graphic methods which exclude personal errors; (3) and why should we not, in cases where it is possible, subject our results to the scientific methods for treating statistics?

What have we done in this second kind of child study that we did not do in the first, except that everything was done better? The difference is the same as the difference between physics as studied by Helmholtz and physics as studied by Plato in the *Timaenus*. When you watch your child play, and when you catch from its lips or gestures some new and precious glimpse of the developing life, you do not suspect yourself of materialism. What if a hundred thousand children are carefully observed with reference to some definite question, the results being examined to discover the amount of individual variation at each age and the trend of variation with advancing age, what is it that turns this process or its results into the "merely physiological?" We can get nothing from child or man, from Lincoln, or from Isaiah, except by muscular motions, which are in us signs of ideas. The experimental study of children is not confined to the "merely physiological" in any sense or in any degree not also true of the hearing of the Sermon on the Mount.

3. Meanwhile what is the fact as seen in the extant literature of experimental psychology? Only those who are ignorant of that literature can be unaware of its manifold contributions to many chapters in psychology. This is not the place for a catalogue of such contributions. It would be easy to mention single cases, but the value of these can only be justly appreciated by those who see them for what they are, parts of a great social movement toward the future science of psychology.

III. (1) Those who wish can be directed in the observation of children with a view mainly to the psychological training of the observers themselves. This is a matter of no small importance. It may be done in such a way as to bring a very great and immediate practical improvement to the schools because of the fuller knowledge and better spirit of the teachers.

(2) In some cases results of such observations may afford material for scientific generalizations, especially if the work be planned and the results be digested by a competent scholar.

(3) In my opinion, the most important work of the future in this field can be done only by trained scientists. A distinguished physicist has said: "It takes twenty years to make a physicist." The phenomena of mental development are not so much simpler that a psychologist can be extemporized. The simplest test affords innumerable possibilities of vitiation. Every test used should be planned with no less scrupulous care and should be carried out with no less delicate precision than is demanded in any other science. We are at present, I fear, in peril of a flood of "results" which can not bear critical examination. The peril is the greater because the public will not distinguish between this and better work. We have, happily, a small company of men with the best training for this work which the world affords. Never before in the history of culture, so far as I know, was there a class of scholars who were expected to know on the one hand philosophy and the history of philosophy and therewith the philosophy and history of education, and on the other hand to have expert training, not only in the results, but also in the technique of the exact sciences. Never before in a class of scholars did philosophy and science so meet. To the outsider what they have done so far may seem what it will—a heap of scraps. But all their strong and eager heads are not at work for nothing. The movement grows rich within. Presently the bloom and the fruit. Anybody who will is welcome to join this company and share in this work, if he is willing to become fit.

Meanwhile nothing is more necessary for all concerned than a wise patience. We can not expect great general results, much less immediately practical results, to order. We must be willing to go very slowly. We must beware of making child study a violent temporary fad. If, as many believe, modern psychology is to bring a renaissance, a new illumination for the reading of all history and for the direction of all affairs, this is not a result to be achieved by firecrackers. (Indiana University, William L. Bryan, in *Interstate School Review*.)



## PRACTICAL VALUE OF CHILD STUDY.

In this day and age the path to any certitude is a long and tedious one. It is indeed a rather difficult matter to become certain of anything. But in spite of this fact and notwithstanding the inclination of the human mind to revel in speculation and indulge in rambling ravings, and thereby gain a stock of figments of the imagination, I make myself bold to say that, as a teacher and student, I am certain of at least three things. These, when stated in proportional form, are:

1. That scientific child study is uppermost in the minds of intelligent parents and teachers and is receiving careful and painstaking attention at their hands. It is certainly in the air which the average teacher respires.
2. That child study is more than a fad.
3. That it is among the most practical and practicable of studies.

In the scope of this brief article I am able to speak of but one proposition only. I somehow feel called upon to speak of the third, because I deem it the most important of the three, and also because I am most certain (if there be degrees of absolute certainty) with respect to the truth of this third thesis, viz, that child study is one of the most practicable of all studies and it is at the same time one of the most practical, if results count for anything as a measure of value.

I always make it a point to tell those of my students just beginning work in my department that if psychology is to be of no practical value to them they should by all means leave it alone. I say to them, as I say now to the readers of this review, that they should steer clear of psychology or anything else that will not appeal to one's practical interests as a teacher and student. For it is one of the chief articles of my creed that psychology is a study of immense practical value, that it necessarily hinges on and joins itself to every question connected with daily life. Likewise, I make the claim that child study (one of the chapters of applied psychology) is a study of immense practical value, that it necessarily hinges on and joins itself to every question related to the question of proper methods to be employed by those intrusted with the problem of developing and unfolding the powers of the child's mind, i. e., education, or educing from the child's own make-up, in a more or less refined and developed form, manifestations of its inborn powers.

On general principles it would be conceded that the teacher should know the nature of the child's mind, just as the pilot should know the nature of his craft and be familiar with the waters in which he sails, for it is certain that mind develops according to certain immutable laws. If, then, the evolution of intelligence in the child conforms to laws, does it not follow that education can take place in the true sense only when these laws are known? In former years the study of educational methods was confined to the perusal of mere theories, but now the wide-awake teacher sees that it is of much more importance to study the minds of his pupils as he comes in contact with them day by day in the schoolroom. It is indeed gratifying to know that this new zest for child study, this eagerness to make the child's mind an open page, is taking the precedence of all other discussions at our educational meetings. I would say, then, that the study of children is among the most practical of all possible studies, because it relates to the mental health and to the economy of human energy. It is almost the only thing—yes, the only thing that can give an exact basis to educational methods.

Again, child study has a most excellent effect upon teachers. By careful, painstaking observation of the child the attention of the teacher is divided from abstract themes and mystifying discussions and is focused upon the concrete child as he lives and moves and has his being in the schoolrooms. So noticeable has been the effect upon the teacher that Principal Russell, of the Massachusetts State normal school, has felt impelled to say that the "practice of child study is primarily and directly for the sake of the teacher, indirectly for the sake of the child, and incidentally for the sake of science." While I can not go so far as this statement seems to signify, I do claim that one of the best results of this sort of work is the effect upon the teacher's own life and methods of instruction, freshening him and keeping him in loving, conscious contact with the child he is endeavoring to lead.

To mention one of the subjects of fruitful investigation in child study, I have only to name the word "fatigue." Some of us know, and every teacher should know, that the degree of fatigue varies with the condition of mind and body. Thus the child tires sooner when the work is distasteful, or when the organs are unhealthy, or when poorly nourished; and the body seems wearied quicker when the mind is tired and the mind more quickly when the body is tired. The child tires more easily at one season than at another. The condition of the atmosphere, the weather, the time of day, all these affect normal power of endurance. Also rapid growth diminishes one's power of endurance. The child that has grown up quickly tires easily. The earliest effect of fatigue is a difficulty in fixing and holding the attention. Fatigue causes the child's mind to be less sensitive to interest or novelty. Also one order of studies fatigues the child more than another order of studies would.



In a later article I wish to set before the teacher the methods that anyone might employ in his investigations into the nature of the child's mind. Simple tests can be used that will be most fruitful of results. It is one of the most gratifying effects that the uneducated observer—the average parent and teacher—can, up to a certain limit, make these inquiries into the child's mind in as thorough and satisfactory a manner as the best seasoned scientist. The vast array of teachers can furnish the scientists with material gained by close conscientious observation. Without this material the most adept scientist can not proceed a single step.

As a mere allusion to the method of procedure it might be well to note, with Dr. Burnham, all study of children falls into two great divisions—(a) psychological, (b) anthropological. The psychological study of children may be further divided into the study of sensation; the study of the higher intellectual processes; the study of the motor life of the child. Under the anthropological must be included the investigations in regard to growth and health of school children, such as those of Bowditch, Peckham, and Porter.

It is our claim that we should reconstruct all educational methods on the basis of the child. The living, playing, rollicking, romping child embodies all elementary psychology, and every great educational reformer whose words have been heeded has been a person who lived in closest touch with children. Some teachers fail to study the nature of the child because they regard it their business to "impart instruction" or infuse information rather than to "educate" or unfold. Others are conceited enough to believe that they have sufficient knowledge of childhood in their own remembered experience of their early years, absolutely forgetting that these few tattered musty remnants are incidental rather than characteristic. (Champaign, Ill., William O. Krohn, in *Interstate School Review*.)

#### THE STUDY OF CHILDREN.

[Address by Dr. G. Stanley Hall before the Cook County, Ill., Teachers' Association, May, 1894.]

My discourse this morning will be a plain, simple, homely talk on this new movement which I think promises to give education a more scientific character than it has ever had before, and to make the work of every teacher and every scholar more effective. This study of children is one of the newest movements in the field of education. It is scarcely a decade and a half since we began this study. It is a significant fact that this movement began and has had its latest career in this country, because here, more than anywhere else, we need to take a fresh hold of life.

I was not surprised to read in a recent report the statement of an earnest and prominent writer that this and the next decade will be known as the age of psychology just as the last two or three decades are known as the age of evolution. The significance of this rests in the fact that in every department of life there seems to be a tendency toward a kind of harvest home to bring the best results of science in every form to bear upon the study of man. It is in this that all the sciences seem to have come to a focus.

But my study this morning is only a small section in this field. Yet, small as it is, it is far too large for a single hour. In my own university I undertook a year ago or more to give a course upon the study of children, and I am pleased to say that there seemed to be substance and interest enough to run it with graduate students, and there was meat enough for a good, sound, robust examination at the end.

This movement began in this country thirteen years ago by an inventory made by six primary teachers in the Boston schools. They took three or four children at a time in a room by themselves and cross-questioned them in regard to a few of the most common objects which school children are supposed to know about, and the result was that their report seemed almost like a new revelation—a revelation of genuine ignorance. Thirty-three per cent of these children on entering school had never seen a live chicken; 51 per cent had never seen a robin; 75 per cent had never seen a growing strawberry; 71 per cent of the Boston children had never seen growing beans, even in Boston. Our school text-books are based on country life, and the city child knows nothing, in the large cities, of real country life. Here is one instance: A large per cent of these children, upon being asked how large a cow was, showed that they had little idea. One thought a cow was as large as her cat's tail. Another thought that a cow was as big as her thumb nail.

That was the first step. The next step was also taken in Boston. We undertook to measure the children of Boston. These measurements have shown first that the average girl is taller and heavier than the average boy from 13 to 14½ years old, but all the rest of her life she is lighter and smaller. Another result reached was that the child's body does not grow alike in all parts at all periods. Certain parts seem to grow and get their force and then to rest for a time. The abdomen, the hips, and even the pupil of the eye has its periods of growth and periods of quiescence. So that growth in all our organs is a more or less intermittent process.

Now think of the immense significance of that single fact for education. We have not yet effected a complete record, but as soon as we know when the adolescent period is and how long it lasts in all children, and as soon as we have the record of this nascent period, we have a basis of education which has never been known before. Suppose we are considering manual training, which causes a great deal of strain upon the hand and forearm. It should last through this nascent period in which the hand grows in strength more than it does before or after. Suppose manual training is delayed until after that period is past, then the force that nature gives has been allowed to run to waste.

Our nervous system, the most important part of us, does not acquire its full growth until we are fourteen or sixteen years old, and after that there is a long period when our growth all centers upon function and not upon size. Then for a long time our bodies go on growing, the brain getting its functional growth long after it has attained its maximum size and weight. Before the brain has got its growth in size and begins to develop in function, education must largely consist in hints, in the suggestions of knowledge. It should be here a little and there a little when the brain is getting large. It is the time when the imagination rather than the exactness of facts meets the child's instincts.

The great danger in our schools, however, arises from imperfect health. I presume there have been 100 special books upon the single subject of children's health. It has become the custom in some countries that in some of the best and most progressive city wards there are young doctors who are paid a small sum to examine every child in the lower grades of the schools. There is a little health book kept of every child. These doctors examine the child's complexion, his muscles, his circulation, his respiration. Are the muscles strong? Eyes bright? Appetite good, etc? According to circumstances may come this direction: Put this child on a milk diet; or, keep this child out of school for four weeks; or take this child to the oculist, or to the dentist, as the case may be. All kinds of suggestions are recorded in this book, to which the parents have access, but which the teachers keep. What would you and I not give if we had had a medical examination every six months of our school life? The results of all these examinations which have been made I can not give in detail, but I will say that 42 to 60 per cent of the children in the upper grades were found to be suffering from defective eyesight, and that this per cent of poor eyesight had increased every year from the sixth year up. In regard to the ear, of course the defect was a great deal less, and it was much more difficult to detect. In the case of some children who were thought to be dull or stupid, it was found that their minds were all right, and if they were placed in the front seat perhaps they would prove to be among the brightest. Sospinal curvature and other diseases were found to be connected with certain work or habits in school.

But the great result of it all is this: That the modern school seems to be a force tending to physical degeneracy. It is very hard for a child to sit four or five or six hours a day during eight or ten months in a rather imperfect air, in a rather unphysiological seat, with the only strain thrown upon the little muscles which wag the tongue. Nature has made it very hard for a healthy child to sit still; and when we consider that children the civilized world over, and in countries barely civilized, all go to school, we see what a tremendous danger there is that the race will be imperfectly developed. How sad the thought that the race may, indeed almost must, degenerate in its efforts toward the realization of its loftiest ideals. I don't know what you say; I for one believe it would be a thousand times better that the children should grow up in ignorance of all that our schools teach, valuable as it is, than for the race to continue in its peril of physical degeneracy, which seems inevitable under our present system. For myself, I say, What shall it profit a child if it gain the whole world of knowledge and lose its own health? Or what shall a child give in exchange for its health? This study of hygiene is setting up a new schedule wherein the work of the school is to be judged by a new standard. The work of the modern school is going to be judged by new scales, I believe, in the next few decades.

You know that about half of the weight of the average male is muscle, and that a large per cent, carefully estimated at one-third or one-fourth, of all the energy of the body goes out in muscular work. The muscles are the organs of the will. No one can have, and it is a matter of observation that no one does have, a good, sound, healthy will unless the muscles are strong. But it is only lately that we have come to think that the muscles are organs of thought, and that when we study muscles in these days of manual and physical training we are studying the organs of thought. So that these studies of motor education seem to be the most important that have been made. One of the most fruitful in results has been to test the school children in this respect. For instance, "Hold up your hands something like this, just out of the range of vision." If the hands come up unevenly, that is a sign that there is a particularly nervous disturbance in the children. "Close the eyes and stand up." The person who has this particular disease soon begins to stagger and lose his equilibrium. And so from these and many other tests we reach these complaints of chil-



dren; and we know that children have symptoms of most of the organic diseases of the adult form, and that while the healthy child goes through them all without any stress, in the child that is a little prone to disease they are quite apt to develop into actual infirmities. Some of the forms of school work seem to aggravate these troubles so that the child exhibits through life symptoms of motor and other nervous disturbances.

We have forgotten that children can not sit still, but you and I know that it is one of the commands which resound in the schoolroom from morning to night. Alas for the child who can sit still for any length of time unless he is engaged in some special work.

For instance, in our tests the children were requested to stand still and then to sit still. We went through the grammar grades. We only had them sit still a minute; then we reduced the time to a half minute, and we did not find a single child who could sit still one-half of a minute; limbs, tongue, hands, fingers were certain to move. Of course, with a little attention it made it all the worse. We saw the secret which has brought premature gray hairs to schoolmasters and schoolma'ams. We found that the idea that children can sit still must be abandoned, and that teachers must learn to possess their nerves and patience if the children do not sit still.

We are almost compelled to say that a child can not do any such thing purely. If he ever comes to anything like pure thought it is late in life. We find that unless the muscles have full and free play you can not get any thought. If there is anything in pure thought it comes from sending out pure, unfettered motions. To illustrate this close connection between thought and muscular activity, I have heard of a pianist whose fingers were made lame when he listened to good piano playing, because we can not think without moving a little our muscles of thought. For children to sit still is to repress their muscular energy, just at that stage when it ought to have its perfect work.

Closely connected with this is the necessity of good muscles. Every time and everywhere that the teacher can add to muscle development and activity she is adding a new source of power. If you can have the child think when he is sitting erect it is better than when he is collapsed. But muscle culture is important not only for the production of thought; it is important for the development of will. We are coming to realize that thought depends upon it, and I doubt not but we are going to be compelled to say that will depends upon it. I once studied the will with one of the great teachers in Germany. When I told him I wanted to study the mind he told me to study one of the seventeen muscles of the leg of a frog. I thought, "What sort of work is this? I have spent several years in the study of psychology, and now I am told to take up the study of one of the tiny muscles of a frog's leg as a means of continuing my study," and I was almost repelled. But I stuck to it, and after months of work I began to realize that I was studying a sample of the same stuff that has done all the wonders of man's work in the world; that I was face to face with the material that has written all his books and achieved all his great purposes. By the end of the first year I had got interested and found there was another year's work in that tiny muscle. I studied the muscle in a way that I had never dreamed of before. This was a new idea. So I experimented and experimented, until at last I knew I had got my result. I had passed in that single work from the standpoint of Peter Bell, of whom the poet says:

A primrose by a river's brim,  
A yellow primrose was to him,  
And it was nothing more.

I had passed from that standpoint up to the standpoint of the seer who plucked a flower from "the crannied wall" and realized that could he but understand what it was, "root and all, and all in all," he would know "what God and man is." I had realized that thought and will and muscle were made by God, and meant to be studied together. It is a lesson which has stuck to me. It is one of the most pleasing results of modern science.

My next point is a distinction in this connection of muscular activity between what is sometimes spoken of as the fundamental and what is accessory. By fundamental we mean all those movements and muscles which are first developed in the growing organism. By accessory we mean those movements and muscles which are the last developed.

Now, how much of our school work violates that law, the fundamental first, the accessory second? I have looked over the list of the things done in the kindergarten. No one believes more heartily in the kindergarten than I do, but I would make one important change in the kindergarten work. I think when you take 4, 5, or 6 year old children and set them at this fine work of weaving delicate strips of paper and at other like delicate processes it is putting the accessory before the fundamental. It is reversing nature's process. Now, suppose instead of weaving fine paper you had big strips of lead and suppose you let the children weave them. And when



they sew suppose you give them a heavy needle and twine. All this kind of kindergarten work is useful. The law I speak of does not involve change in a single instance in the kind of work. It does require, however, that the work should exercise first the fundamental muscles, and not tax the delicate accessory muscles at that early age.

I want to see this thing applied in the kindergarten work. I want to see small writing, small figures, fine lines, and everything which puts undue strain on the delicate muscles that are not developed until a later period put away from the primary school.

Dr. Hall then enlarged upon the lessening of interest and effort in school and college in the study of natural science which has been observed during the last decade or so. Science is being studied assiduously for its commercial secrets; but the study of science as science, out of pure love of nature, is receiving less and less attention. This difference, he said—

I believe to be simply due to the fact that city life has taken children away from nature, so that the real love of the children has not been given free course. It is impossible in the large cities to teach these nature subjects as they ought to be taught. Blackboards will not do. It grieves one to see these blackboard leaves when they are the whole text of instruction in our common schools. Flowers do not grow in chalk frames. They have got to have the environment of grass and trees and sky in order to touch the soul. Nature is the first love of every child, and every child who does not feel this love is in an abnormal state.

We have been cross-questioning a good many children in reference to their feeling toward nature. We found a good many who said, "this tree or this rosebush knows me or knows when I come here." One said, "I can see this one languish because the other one is cut down." Another said, "I always know the difference between a fool tree and a wise tree, and I thought everybody did." "I know," said another one, "that trees feel it if their limbs are cut off." We had children who talked to their doll and their pet hen. We had one child who said she understood her lamb. "I know he knows me, for when I put out my hand he sees me and puts out his hand; I shake my head, he shakes his head." The child philosophy about all these things is a natural philosophy. The little girls who hug and kiss their pigs and are not reproved by their mothers are indeed children of nature. The children who really make friends to the flowers and whose hearts go out to the stars, they are the children who can be understood and who can understand nature's language. Premature, pallid little Christians they will never be. You can not induct children into the love of nature by the use of the microscope and charts. There must be a previous sympathetic ground work. And I say to those who love children, you must love nature and children and God together. They were never meant to be separated and can not be separated without injury to all. Religion is locked in the love of nature, and without the love of nature and the love of God all is sham.

I am pleading for child study and am giving you a few of its results and applications. Do not understand me to say that these results are the best of it. The best is the effect upon the teacher, and next its effect upon the children. It makes the teacher young; it converts age into youth; and I believe there is no panacea for keeping the heart alive, and there is nothing to keep the heart on fire like great love of children. Children live in the heart. Their mind is a very small affair. Their life is there. The heart must be cultivated. The things that enter and stay are those elements which go through their mind to the will and heart.

We all live for life. There is nothing so great as being alive. The joy of being is the prime element in life. Take it away and what would be left? Think of our forms of greeting. What do people ask for? Everywhere, How are you feeling? How do you do? in every language. We ask strangers, How are you? How do you feel? That is the touchstone by which we test not only a man's worth to himself, but also his worth to the world. I visited incidentally, your Cook County Normal School. I go there when I can, ever since you stole Colonel Parker from us, to wind up my watch and get inspiration. I find new ideas and fresh suggestions. I find a new institution, which, if it were in Germany, would be one to which our graduates would go to wind up their watches. It abounds in the fullness of being, and this is its strength.

As covering in substance the last part of his address, we condense a few sentences from one of Dr. Hall's late articles in the Forum:

There is no doubt but that at puberty the former self is in a sense broken up, and that there is a long period of stress and storm before this new creature of the physiological second birth is fully compacted, so that shelter or "safety" in school and home surroundings is the first essential. As there is a soil from which all the processes of our physical life spring, so these spiritual impulses are the raw material out

of which all the great deeds, long labors of discovery, the triumphs of love and war are made. There must be a healthy glow and flux of living, good will, elastic buoyancy, joy of living. This is the life in which our nerves must not be scant. Those who lack this are undeveloped; they can write, perhaps, a decent burlesque or criticism, and even carry a goodly amount of culture, but they can not be creative or original. They lack the divine power of active appreciation, reverence, and sympathy. If young men fail of zeal and ardor on a high plane, they are more prone to seek it on a low one.

After the first rapid growth in weight and size, muscular power unfolds with waxing and then waning rapidity for a decade or more. Thought we now deem repressed action. Doing is also an organ of knowing. What we do pre-forms the soul. In the relations of exercise to regimen and exposure, in the dangers of an unsettled physical condition, in the laws of training and reaction, of accessory and fundamental activities, in the dangers of precocious specialization, as the overuse of the tiny pen and tongue-wagging muscles, we now have, as at least a partial result of child study, an amazing advance within our reach in both theory and practice. (From Intelligence.)

#### A TEACHER'S RECORD OF HER PUPILS.

In the fall of 1884 there was organized in Brooklyn a little school, christened by one of its patrons "The Froebel Academy." The little academy grew out of the demand of some of the citizens of uptown Brooklyn for a school in their own neighborhood in which children from the kindergarten age to 12 years could receive the advantages of the more improved methods of instruction. It was my privilege to organize this work. With a board of trustees representing a very high degree of intelligence on educational subjects, and with none of the inherited limitations of an established school, we found ourselves in an atmosphere of freedom highly stimulating to best thought and highest purpose.

In the first year, work in child observation was begun. It had for its object a more thorough and systematic knowledge of the child in order that efforts for his best development might be more effective and successful. The method was simple in the extreme. The teachers met to review in order each child separately—to say what were his best possibilities and his greatest needs, and to ask how the first should be realized and the last satisfied. At the close of the year the list was again reviewed, and the development of each child was carefully noted. A quotation from the record of this work will suggest its character:

"(1) A persistent, careful worker; inclined to be nervous and impatient; a leader with a good influence generally. Second entry: Work in class not satisfactory; want of steadiness and persistence; influence bad, tendency to pettiness and gossip.

"(2) A close observer of nature; his general work greatly wanting in method and mechanical power; a fine, sensitive, pure character, exerting a quiet but very good influence. Second entry: Improvement for the year marked, especially in method of work; less dreamy than last year; influence excellent."

A high sense of honor pervaded this work. The home was not called in question. The child was taken as he was, and the problem as to how he could best develop his own powers occupied our thought. The record was for the teachers only. An admirable opportunity was lost here, for there was organized in that first year a society of women—the mothers of our children—whose purpose was mainly that of intelligently uniting the interests of the school and the home. Had the work been frankly shared with them its value to all interested would have been much greater. No thoughtful teacher can long continue a systematic observation of the life and growth of a child without concluding that he is largely influenced by three powerful agents—the home, the school, and the neighborhood. Too often some of these three influences are in conflict, with the result that the child is always the loser. Given intelligent cooperation between the first two, the third is largely controlled; but not until this is done can there be any least hope of making the harmonious education of the child a comparatively certain thing.

As I recall the results of this work I see that they were twofold, for it affected both the children and the teachers. The even development of the child was less accidental as efforts for him became more cooperative. The undeveloped power that we had agreed that a boy possessed found by more united effort increased opportunity for activity and bad mental habits received more consistent check. The work of one teacher was not undone by another because of ignorance of his purposes for the child. The teacher shared more of the parent's feeling for the child, and human interest and sympathy increased. The subject-matter of the lesson no longer held the leading place in thought, for the teacher had a living subject, and lessons became a means, not an end. The work grew in interest, freedom was given for individual growth, routine was banished, and something of the home atmosphere entered with the home feeling.



Seven years have passed, but these children live in my mind as if I had parted with them yesterday. Clearly defined and individualized they hold their place in memory as no other children have done, and I feel that, through all the intervening changes I know them to-day as an artist, who has clearly seen the strongly blocked outlines of the unfinished statue, recognizes it at once, though many finishing strokes have been added by other hands.

Last year this work was applied in a somewhat modified form in the practice department of the State normal school at Platteville, Wis. Meetings are held quarterly, attended by the pupil teachers of the class in review and by the department principal. The growth and work of each child is carefully reviewed and recorded. First place is given to the young teachers in the discussion. Their insight into child mind is a good test of their native power in this direction and of the faithfulness of their work. I copy from this present record:

"(1) *October 1*: Age 6 years; bright, but lacks continuity and power of concentration; does not seem to think at all in number work. *November 15*: Perceptive powers very active, but no power of concentration; nothing is assimilated; his teachers are working faithfully to gain habits of attention. *January 13*: Marked improvement; a good growth in attention and concentration; more thoughtful in his bearing; memory much improved. *March 8*: Has been absent and lost ground; his work as a rule is good. *May 23*: Is growing beautifully; inclined to distrust himself; a helpful child, sympathetic, interested in others.

"(2) *October 1*: Age 8 years; good mind, sensitive, reticent, sometimes covers this with an air of bravado; a careless worker. *January 17*: Improved habits in work, in conduct, and in thought; realizing his possibilities rapidly. *March 13*: Has been doing good, even work; much interested in natural science. *May 24*: Not working up to the level of his power; careless about form; all handwork poorly done; frequent lapses in attention; a child who lives in a world of his own.

"(3) *October 1*: Age 10 years; heavy-eyed, not well, hearing and sight slightly defective; wanting in self-trust. *January 9*: Marked improvement; very uneven in his work; inclined to be self-distrustful. *March 8*: Marked improvement; still self-distrustful and uneven; influence not always good. *May 23*: Progress for the year excellent; has gained in power to think; much improved in bearing; interested in the work of others; gaining the respect of the class; still wanting in self-trust.

"(5) *October 13*: Age 11 years; a child of unusual beauty in face and form; excellent possibilities in mind and character; habits of attention rather poor; wanting in self-trust. *January 21*: Excellent progress; a gain in self-trust; always tries. *March 22*: Shows an inclination to be fussy over little things, a danger toward selfishness; shows the symptoms of the indulged child; general work good. *May 4*: Good work; inclined to be a little languid sometimes; a danger toward self-indulgence.

"(7) *October 20*: Age 15 years; good natural ability, with good general knowledge; an observing mind; thoughtless in manner; always truthful. *January 25*: Has improved in work, but has not improved in self-control; inclined to try for leadership among his boy companions. *March 24*: No moral growth; inclined to think too well of himself; marked symptoms of forwardness and conceit."

Modern science asks that the subject be studied in the object. Slowly modern education is recognizing that its subject is not learning, but the learner; slowly it is awaking to the fact that this learner is not to be studied in the books alone, but in his own proper person, in his own rightful place, to be known as he is. The individuality of the child is now recognized as something to be carefully preserved and developed. That he shall come into possession of his own best powers, that his personality shall find freedom for expression and all-round growth, is for him a matter of vital importance. To meet this need the school must give the child liberty to do his own thinking. Such liberty is doubtless one of the demands of modern education, but it can by no means be given indiscriminately. On the contrary, it must be constantly readjusted to suit the growing power of the individual or class to use it well.

In this view of the child as an independent entity the teacher necessarily becomes and remains a student. Preconceived theory must often be abandoned, and routine and dogma banished, while he learns from the patient observation of the lives of children what are the needs of themselves, and what conditions give happiest, most truly fortunate development. Everything, then, that helps the young teacher to become a practical daily student of child nature is for him the best possible training in the science and art of education. This work was taken up for the benefit of the child only, but it has proved itself of great value to the pupil teachers.

Doubtless one of the evils of practice work is its tendency to induce self-consciousness on the part of the teacher; his careful training in method exposes him to the danger of fixing his thought on the subject to the exclusion of the child. All this is opposed to that sympathetic relation between teacher and child which characterizes all best teaching. But I believe that the observation of children has helped to con-



centrate the thought of the young teacher on its legitimate object—the child. It has tended to form the habit of working for the child as an individual, and it renders such work more intelligent and effective.

Simple as the record is, it affords material for answering many questions respecting the character and growth of children. It is a constant reminder of the effect, good or bad, of the school. It promises in time to afford an interesting history of the development of individual children, a history that will doubtless be valuable in answering questions as to the flexibility of the child mind and character, as to his vast possibilities for growth or retrogression. It suggests that the best growth is attended with its own dangers; that one-sided development is easy and almost sure to attend defective conditions; that the complex child nature requires a very whole life to supply its needs. The intellectual stimulus is not enough, but active participation in the common life of all, sympathetic interest in nature and in the activities and interests of the industrial and social world, all are needed to secure the beautiful all-sided growth of a little child.

This plan will be adopted and adapted by some of the public schools in the following manner: Teachers in the various grades will make a record of those children who for any reason stand out most conspicuously in their classes. These records will be given to the superintendent and kept from year to year. The plan meets the obvious difficulty of dealing with large numbers in the public schools, and it renders character study necessary in those marked cases with which teachers must deal directly and individually. (Mary E. Laih, in *The Forum*.)

#### PAIDIOLOGY OR CHILD STUDY.

Supt. H. E. Kratz, of the Sioux City public schools, furnishes the results of a deeply interesting investigation he has lately been making among the primary pupils of the schools of the city. Professor Kratz says:

A new word has been coined recently, which stands for an exceedingly interesting and helpful line of study, and has in it the promise of increasing greatly the efficiency of educational work.

Wishing to make a slight beginning in the direction of ascertaining the contents of a child's mind at the age of 5 years, I made out a list of questions to be asked separately of the pupils who were for the first time admitted to the public schools.

The questions were designed to draw out the child's knowledge of number, color, his power of observation, how well he had stored his mind with general ideas of things seen every day, and his general intelligence. The following is the list of questions asked of 133 children from all parts of the city. The per cent of correct answers only is given:

1. Pick out two objects, 95 per cent. Four objects, 69 per cent. Three objects, 76 per cent.
2. What is a brook? Eighteen per cent.
3. What is a pond? Fifty-four per cent.
4. What is a river? Eighty-one per cent.
5. What is a hill? Seventy-eight per cent.
6. What is dew? Fifteen per cent.
7. What season is this? Forty-eight per cent.
8. Have you seen the sun rise? Sixty-nine per cent.
9. Have you seen the moon? Ninety-two per cent.
10. Where are the stars? Eighty-six per cent.
11. Pick out a green card, 79 per cent. A blue card, 73 per cent. A red card, 86 per cent.
12. Which is your right hand? Seventy-one per cent.
13. Where is your cheek? Seventy-one per cent.
14. What is a frog? Fifty-seven per cent.
15. What is a chicken? Seventy-nine per cent.
16. What is a cow? Seventy-six per cent.
17. What is a tree? Sixty-three per cent.
18. How does corn grow? Fifty-six per cent.
19. Where do pears grow? Fifty-two per cent.
20. Where do beans grow? Forty-seven per cent.
21. Where do potatoes grow? Sixty-nine per cent.
22. Where do apples grow? Eighty per cent.
23. Where does milk come from? Eighty-six per cent.
24. From what is leather made? Ten per cent.
25. From what is flour made? Sixteen per cent.
26. Where does wood come from? Fifty per cent.
27. Where does ham come from? Sixteen per cent.
28. From what is butter made? Forty-six per cent.

29. From what is your coat or dress made? Sixty per cent.

30. Where is God? Eighty-nine per cent.

31. What is right? Forty-seven per cent.

32. What is a school? Seventy-three per cent.

The above summary, although covering the answers of a limited number of pupils, is, nevertheless, an interesting study and highly suggestive to the teacher. Ninety-five per cent of these beginners know the number two, and three-fourths the number three. This indicates that time may be wasted in developing both these numbers.

The following are a few of the many characteristic answers given:

To question 2. "A stream of water." "Water that has flies on." "A little thing that water runs in."

3. "Where there are frogs." "Round and water stays in it." "To set on and fish."

4. "Place where brother fishes." "A flood." "Great big one where water stays."

5. "Steep place." "Big steep dirt." "A place to slide down." "A big, big place of earth." "A bump."

6. "Wet on the grass." "Frost." "Is misty, sprinkles."

10. "In a paper." "Up in the moon." "By our house." "Up to Jesus."

14. "A hop toad." "Like a nigger." "A hopping thing." "A jumper." "Something that can eat you up."

15. "Got feathers on." "Good to eat." "Makes eggs." "Can lay eggs and wear feathers."

16. "Has a tail." "Got hair on." "It's a bossy." "Hooks people." "Something like a mule with horns."

17. "Got roots and limbs." "To sit under." "To climb upon." "To make the wind blow."

18. "On big cobs."

19. "On flowers." "In Minneapolis."

20. "Under the ground." "On trees." "At the store."

21. "On trees." "Potatoes don't grow."

22. "On flowers."

23. "Milkman."

24. "From wood." "Paper." "From a shoe." "Rubber." "Out of a kangaroo."

25. "Snow." "Grass." "Salt." "Yeast." "Paper." "Eggs." "Milk." "Corn."

26. "Coal office." "From the river." "From trees and corn palaces." "Chopped down trees." "God made it."

27. "Out of lard." "Store." "Packing house." "Killing cows."

28. "From a churn." "Buttermilk." "Lard." "Grease." "Apples."

29. "Thread." "Rags."

30. "In another world." "Up on the hill." "Up in the moon." "In my prayer."

31. "Not to be naughty." "To work." "To behave." "To work and be nice and kind." "To mind mamma." "To set the table." "Not to run away." "When he don't lie or steal."

32. "Schoolhouse." "Show you A, B, C." "Where children come." "To learn lessons." "To spell and read." "Its here." "To put little kids in." (From New York School Journal.)

#### THE LANGUAGE OF CHILDREN.

[By F. TRACY, of Clark University, Worcester, Mass.]

Having spent considerable time on the study of the language of children just learning to speak, I feel justified in laying before this congress one or two points which seem to me of the greatest interest and importance.

Several studies have already been made upon child vocabularies, and results published, but, so far as I know, one essential point has always hitherto been overlooked, viz, the phonetic arrangement of the words; that is to say, the consideration of the *sounds* rather than the *letters*. The child's words have been classified according to the initial letter, on the basis of the traditional English alphabet. It is obvious that such an arrangement is entirely misleading as regards the real nature of the sounds uttered by the child. For example, in such a classification many words beginning with the sound of *k* are classified under *c* because they are spelt with a *c* (such as "corner," "come," "crown," and the like). And so the list of *k* appears small, and the conclusion is hastily drawn that this is a difficult sound for the child to make because he has but few words beginning with it as initial letter. Several other false conclusions of a similar nature are reached. It is very desirable that those who classify child words henceforth should take the greatest pains to arrange them *not* alphabetically, but phonetically.

In a careful study of some 25 child vocabularies, comprising nearly 6,000 words, some facts have come to light different from what might ordinarily be expected, as



a result of this phonetic arrangement. The *k* sound turns out to be not at all a difficult sound for the average child. As an initial sound it occupies third place in order of frequency, standing indeed above *m*, which is usually supposed to be one of the easiest of sounds.

I have several times met with the remark that the young child learns to speak largely by watching the lips of those who speak in his presence, and imitating the movements which are there visible. Hence, on this theory, those sounds will be best and earliest learned the movements involved in which are most plainly visible, and therefore most easily imitated, such as the labials for example. This theory is not at all borne out by my observations. The *k* sound, whose movements are absolutely out of sight, is learned more readily than some other sounds whose movements are plainly visible, such as *th* in "think."

So far as I am able to judge, the earliest vocal movements are not imitative at all, or only so to a very limited extent, and are what Preyer would call impulsive movements. The child utters sounds before he is of an age to be able to appreciate and imitate the sounds and movements of others. He combines these sounds afterwards in imitation of others, but the faculty of imitation seems to play little or no part in the first beginnings of infant articulation.

The consideration of the relative frequency of the different parts of speech in the vocabulary of the child also yields some interesting and valuable results.

Among those who have studied the language of children it has generally been supposed that substantives, names of things, are more readily learned than predicative words, inasmuch as they are usually more numerous than the latter in the speech of children. But it is obvious that we must take into account not only absolute but relative frequency; that is, we must not only compare the number of nouns in the child's speech with the number of verbs, but also compare the speech of the child with that of the adult, and prove that he has acquired a larger proportion of his future substantive vocabulary than of his future verb vocabulary. But according to the child words examined by me, the opposite is the case. In the vocabulary of the child of 2 years of age (taking the average of my 25 cases), 60 per cent of the words are nouns and 20 per cent are verbs. But in the vocabulary of the ordinary adult, 60 per cent of the words are nouns, while only 11 per cent are verbs. In other words, the child of 2 years has made nearly twice as much progress, relatively, in the acquisition of those words that are associated with movements (verbs), as he has with the acquisition of those words that are merely names of objects.

The same is true, even to a more striking extent, when we compare the acquisition of adverbs with that of verbs. The average child makes nearly four times as rapid relative progress with the adverbs as with the verbs. It is interesting in this connection to remember that Max Müller says that the primitive Sanskrit roots of all our Indo-Germanic words originally indicated *actions*, and not *objects*.

The principle itself is one that is revolutionizing modern pedagogic methods. Its germ may be found as far back as Aristotle, whose whole ethical system is based upon the formation of good habits by constant training of the activities, and who has said that even as we learn to play on the harp by playing on the harp, so we become virtuous by doing actions of virtue, and just and brave by doing actions of bravery and justice. (From Proceedings of International Educational Congress.)

### THE THEOLOGICAL LIFE OF A CALIFORNIA CHILD.

[By Prof. Earl Barnes, of Leland Stanford Junior University, California.]

This study is not intended in any sense as an inquiry into the child's religious life and feeling. It is intended simply to show the theological atmosphere in which California children live, and their mental attitude toward their theology at different ages.

The materials on which the study is based are:

I. One thousand and ninety-one compositions written by children from 6 to 20 years old in the various schools of California, on the subjects of heaven and hell. They were simply given the subjects and asked to write compositions in the presence of their teachers, without suggestion or comment.

II. Sixteen reminiscences prepared by adults, in which they tried simply to recall and state their early beliefs.

III. Twenty-seven studies on young children made by mothers and teachers through conversations, working along the lines of this syllabus:

*God*—Where is He? What does He do? Why can not we see Him?

*Death*—Why do people die? Where do they go?

*Heaven*—Where is it? Who goes there? What do people do there? What will children have there?

*Hell*—What must a person do to go there? What is it like?

*Angels*—What do they do?



*Ghosts*—Why are people afraid of them?

*Witches*—What can they do?

*Prayer*—Why do we pray? What do we pray for? Why do we not always get what we pray for?

*Religious ceremonies*—Why do we celebrate Christmas? Why do we go to church?

Every variety of faith was represented in the papers—Catholics, Methodists, Presbyterians, Universalists, Christian Scientists, Mormons, Baptists, Adventists, and Spiritualists. With only two or three exceptions the children treated the questions seriously, and the papers bear internal evidence of honest effort to express the truth.

The data were collated in the following groups:

God, His appearance and activities.

The devil, his appearance and activities.

Heaven, its location, its inhabitants, and their appearance and activities.

Hell, its location, its inhabitants, and their appearance and activities.

Indications of a critical attitude; acts which take people to heaven; acts which keep them out of heaven.

Since the children were not answering any set questions, we can not state what proportion accepted any particular idea, but only how many of the children who mentioned an idea accepted or rejected it.

In studying the data an attempt was first made to bring together the theological conceptions expressed in the compositions, and then to determine the attitude of the children toward these conceptions.

The central figure in the theology is naturally God. The pictures drawn of Him are often misty and indistinct, but more than half the papers represent Him as a great and good man. He is so large that "He could stand with His feet on the ground and touch the clouds with His arms upraised." "He is a man that has six hands and feet and eyes;" or, "He is a huge being with numerous limbs spread out all over the sky."

He is generally an old man, with a long white beard and flowing white garments, often He is represented as having wings and a crown on His head.

He is most often described as good and kind; the stern quality is seldom apparent, but the whole figure is shadowy, unreal, and indistinct.

A considerable number of children speak of Him as being able to do anything, as being everywhere, and as knowing everything. Omnipresence seems hard for the children to conceive, and it probably accounts for his being represented with several heads and members.

Omniscience is easier: "God can see everything you do and hear everything you say, even if you are inside of a house." "I have thought and been told that He can see through anything; it makes no difference if it is iron, steel, glass, wood, or anything." Many of the children feel that God is watching them, and some say "He writes it all down."

Omnipotence is mentioned by many children, but there are few concrete instances given. One girl of 12 says that "God could have an earthquake at any time." His activities are seldom described; less than 5 per cent of the children speak of Him as ruling the universe, making things grow or caring for our material needs. One boy of 10 says in perfect earnestness that "God is bossing the world."

Christ is seldom mentioned, and his relation to the Father is rarely brought out; where it is, in one-fourth of the cases the relation is reversed and God is spoken of as the Son of Christ. The Trinity is mentioned by only two children. Christ is mentioned as our Redeemer by some twenty-five children.

Heaven is generally, even with children up to the age of 12 and beyond, simply an improved earth. More than 500 children locate it "in the sky," "in the clouds," or "up." The next most common location is "where the good go" or "where God is," while a few say it is "in the earth," "all about us," "on some star," or "in the east," "and no one in a balloon could reach it, it is so far away." More arguments are produced to prove the location of heaven than to prove any other one point. Christ, they say, ascended; Elijah went up, and several close the argument for locating it in the sky by saying: "Besides, where else could it be?"

Among those who are in heaven, 482 mention angels; 367, God; 412, the redeemed; and 64, Christ. A few mention dead relatives, the saints, Santa Claus, and unborn babies.

Heaven is most commonly described as "a beautiful place," but large numbers describe it as "a city," "a mansion," "a palace," "a fine house," "a garden," or "a park." It has streets and gates, plants, flowers, birds, and trees. The concrete particular most commonly mentioned is gold. The streets are of gold, the walks are of gold, the houses are of gold, and one boy has the angels eat gold bread. Several say there is no night, and opinion is about equally divided as to whether there are animals in heaven.

The redeemed and the angels are generally the same. Three hundred and forty-six children mention their wings; nearly the same number speak of them as looking

like people dressed in white. A considerable number say they are women, because they never heard of any men being angels, while a few say they are fairies, birds, ghosts, or little babies. Several think of them as always small, others as having "just babies' heads and wings."

The appearance is sometimes carefully described, as when a girl of 13 says: "I think they wear white gowns shirred around the neck;" and she adds: "I should think the boys and girls would wear their hair alike." Another says: "I thought angels were all the same size; that even if before they died they were fat, they grew thin."

The activities of the redeemed, or the angels, furnish the most difficult detail in the children's theology. Several say they do not know what the angels do, but most of the papers represent them as flying around, playing on harps, and singing praises to God. Sometimes they are said to help God, and a very few have them help the people on earth. Children of 12 or 13 often mention the monotony of the life.

Several mention the angels as carrying the souls of the dead to heaven, and bringing babies to the earth. Some of the children declare that the angels work, while an equal number say no one works in heaven. To some of the children this freedom from work is the chief attraction.

The evil spirit and his abode are pictured far less often and with less detail than is given to the abode of the blest, but there is much greater uniformity in the descriptions.

The general type of devil is well described by a boy who says: "I thought the devil had a man's head, with a long hooked nose and a pointed chin, with an ox's ears and horns. He had a man's body, and one leg like a man and the other like that of an ox. He had a tail with a ball of three points at the end. He carried a spear with three prongs, the same as his tail. He could spit fire, and had a tongue like a snake." Often he is black, sometimes red; three or four speak of him as a fallen angel; a few as a serpent or monster.

His activities are tempting and fooling people, and killing and burning people. Some say he bites and scares people, or carries off children. Generally, however, the children do not go into any detail about him, but simply say he is a bad man who tempts people.

Hell is generally located under the earth, or below us. It is a place of fire, some say like a furnace, and very few add snakes and darkness; but hell and the devil play a small part in the compositions, and disappear almost entirely from the compositions written by children over 10 years old.

In all this scheme of theology natural phenomena plays but a small part. The stars and moon are a very few times spoken of as lighting heaven. In two or three cases the clouds support or hide heaven. Two or three speak of God as like a cloud, and one says the devil is like smoke; but there is little connection in the compositions between the celestial hierarchy and the mountains and hills, the plains and woods, the deserts and oceans of this world. Thunder and lightning, birth and death are hardly mentioned in these connections. God is certainly not seen in His works by our ordinary school children.

To summarize briefly the theological ideas of California children, we should say: The world of spirits is for the most part attractive; there is very little dark and forbidding imagery; terror is unknown; the ideas are generally vague, and the standard theological beliefs are often quoted in ways that show that the children have had little or no teaching.

The attitude that children of different ages take toward this theology is an important question for the educator.

The young children under 6 examined by mothers and teachers almost always accept what they have been told without question or comment. They, however, recast their theology into forms that appeal to their experience and their modes of thought.

The spirit world is simply a beautiful playroom or playground where children have what they want; God is a more serious form of papa, the angels are playfellows, and satan is simply a "boogie," while hell is a dark closet.

From 7 to 10 there are occasional vague questionings, but under 10 years old there are few indications of a questioning or doubting frame of mind. From that time on, however, questions arise; the children try to reason things out and to relate their theology to what they have learned through experience and through their studies. This critical spirit seems to culminate at 13 or 14, and criticisms are far more persistent and severe at this time than later. Of course, in this work, as in all studies on children, we must recognize the fact that some children develop much more rapidly than others, so that there are many exceptions; but there is a clearly marked difference between the compositions of children of 11 and of 13 which must strike even the most careless observer. One sees this difference even when the children are doing the same grade of school work; age marks differences better than school gradations do.



Forty papers were selected at random from 1,000 to illustrate the critical attitude. Ninety per cent of them were written by children between 12 and 14 years old.

The critical spirit first appears in an effort to place the responsibility for the doctrines stated in the compositions. Thus, at 11 and 12 there begin to appear in the compositions such phrases as, "I think," "I've been told," "my idea was," "the Bible says," "I was taught in Sunday school," or "they say." By 13 or 14 these phrases become, "we imagine," "I used to believe," "I doubt," etc.

A girl of 13 modifies her statements as follows: "We can not exactly tell who is in heaven, but it is supposed that everyone that serves Him probably goes there." And a girl of 12 thus tries to place the responsibility for the statements she offers: "If heaven is a place where you are said to be always happy, I think it must be very beautiful. One of the most lovely things to beautify a place is flowers, and it is my opinion that we will find lovely flowers there. It is said that the people that go there, who are angels, have wings, and dress in white. Of course, I have never seen them. So I don't really know how they do look." The most common form of criticism is that which appears in efforts to harmonize theology with experience.

Thus one boy says: "I used to believe that the air was full of bad spirits which would hurt you, but I don't believe it now, because they don't hurt." A girl of 15 says: "I don't see how people can stay in heaven forever, without nothing to do except to play and sing, but people might be different there from what they are here."

The new desire to exercise the critical judgment seems at times the only reason one can find for the questions raised. Thus a boy of 14 says: "I thought that the devil and all the other things were just as they say they are in the Bible, from which I got my impressions, but beyond that all is a mystery. My idea of heaven has changed, and now I think that heaven is space. But if that is so, how could the heavens open, as it says they did in the Bible?" And a boy of 14 says: "I think it is strange that when one dies his soul goes to heaven if he is good, and if he is bad his soul does not go to heaven; and I don't see what good it does for your soul to get to heaven, because when you are dead you know nothing of it."

The children at this age also try to make their theology harmonize with their humanitarian feelings and their sense of justice. One boy of 14 says: "I think when a mother sees her son, if such things happen, left among the bad, she will not be very happy for a while." Frequently the children of this age say they do not believe that savages and babies will go to hell, while very many who accept the standard theology for God, the angels, and heaven, declare that they do not believe there is any devil or hell. This, of course, may be due simply to their teaching, but it seldom appears in compositions by children under 11 or 12 years old.

A very few assert their disbelief in any form of theology, but these few atheistic statements are more dogmatic in general than the statements of orthodox Sunday-school children, and bear all the marks of having been simply accepted from parents or others. For example, a girl of 11 writes: "Heaven is our dear mother and father, and heaven don't help to grow, nor he don't give us bread nor anything." And, again: "When people die they put them in a hole and put some ground on them and leave them there--and they don't go up in heaven or any place; they always stay in that same place."

After children pass 15 they generally avoid telling what they believe, by saying: "I used to believe," or, "When I was little I believed," etc. If they express their present beliefs they raise very few concrete doubts. They use more abstract terms, describing God as a great, all-powerful spirit, and heaven as a beautiful abode of the blessed. Angels are celestial spirits and the devil is the great evil influence in the world.

One can not help thinking that they have accepted an abstraction and a name, and have, temporarily at least, laid the questions that perplexed them aside. Certainly from 15 to 18 there is no such persistent exercise of the critical judgment in matters theological as there is between 12 and 15.

In all these reasoning processes the Bible is only occasionally referred to as an authority, and in citing it the children show a very great ignorance of the most common biblical allusions.

Incidentally this study throws a strong side light on what children are taught to consider good and bad acts. Naturally most of the children say that to go to heaven we must be good, and that if we are not good we do not go to heaven; but in many cases they specify virtues and vices supposed to be especially prominent.

Next to being good, the virtue most commonly named is obeying God, and then comes in order of importance: "Keeping the commandments," "believing in God," "loving God," "praying," "trusting God," "obeying parents," and "telling truth." Less than 1 per cent of the children mention "going to church and Sunday school," "reading the Bible," "keeping Sunday," "working hard," and "being baptized."

A boy of 4 says: "You must be good on the earth and be quiet;" while a boy of 10 sums up the virtues with: "God wants you to obey your parents and to do what they say, and he wants you to be polite to everybody you meet on the street."



The whole career of a good man is summed up as follows by a boy of 12: "The good man will first join the church on probation, and then in six months he will join the church and be a member. He will push the work of God along as much as he can, help the poor and the church, and probably be successful in heaven. He will die a happy man and go to heaven."

Among the bad qualities, next to being bad, the children mention "disobeying God." Very few concrete sins are mentioned; less than one in a hundred mention "swearing," "lying," "talking dirty talk," "drinking," and "using tobacco."

Many allusions also throw light on the sources of the theological ideas which the children hold. Many say: "My mother has told me," "I have heard in Sunday school," or, "they say in church;" not one mentions what his teachers have told him. Evidently the effort to secularize our schools has been but too successful. One boy says he got his ideas of the devil from a Punch and Judy show; two say their ideas of the devil came from the pictures on deviled ham. Several mention the hired girl as an authority, and a large number say their ideas came from pictures.

From the study of the data in hand it would seem that we could safely draw the following conclusions: If young children are to be taught a theology it must be in anthropomorphic and realistic form. We may teach that God is a spirit, but the child's mind at once invests him with a form and human attributes. If we do not furnish exalted and worthy imagery, the child fills out the form with random pictures, Punch and Judy impressions, and images of grocery labels.

Since pictures furnish so much of this imagery, children should be surrounded with worthy pictures—e. g., Raphael's Sistine Madonna.

Through confidential conversation with the child grotesque images should be detected and corrected.

Many California children seem to be ignorant of the most common and most generally accepted theological conceptions of Christian people. They should be given this knowledge, if for no other reason, because it is essential to an intelligent understanding of the literary and artistic life of our times.

The period of most intense critical activity is the period of puberty. Some special effort should be made at that time to assist the child in rearranging and adjusting his philosophical and theological conceptions. In the schools literary, historical, and scientific studies should be dealt with in a large and philosophic spirit. The child's desire to grasp the universe should be encouraged, not discouraged. Later he will settle to detailed work.

The general absence of references to nature would seem to indicate that children are accepting scientific explanations as final. It would seem that the schools should lead them to feel and realize that Greater Power which lies back of our superficial explanations and makes this a sane universe. (From Proceedings of International Educational Congress.)

#### METHODS OF LABORATORY MIND STUDY.

Scientific or laboratory psychology has found a rapid development in America, but very little has been said of its practical bearings. Our investigators have discovered, and are steadily discovering, innumerable facts and laws that are of inestimable value to practical educators, teachers, and all who educate or influence others or themselves. Of this practical side of the new psychology I wish to give a few examples, in the anticipation that before long the science of education, the arts and all the technical pursuits in which mental ability is involved, will pay as careful attention to the discoveries of experimental psychology as mechanical and electrical technology pay to the discoveries of physics.

One of the most fruitful fields of the psychological work has been found in measurements of the time required for mental acts. Let a dozen or twenty persons take hold of hands in a ring, each is to press the hand of his right hand neighbor as soon as he receives a pressure from the left. One person starts the pressure going, and at the same instant observes the position of the second hand of a watch. The pressure passes all around the circle, and when it arrives at the originator he notes how many seconds were required for the given number of persons in succession to receive an impression and make up their minds to act in response. The total time is then divided by the number of persons. This is a crude illustration of the reaction time which we measure with great accuracy on single persons.

As the mental portion of the reaction time becomes more complicated, the time becomes longer. For example, the processes of mental discrimination and choice require time of their own. The way we get at these "higher" mental processes can be illustrated in a simple way: A person placed in a quiet room is to tap a telegraph key every time he sees a red light, which can be produced at the will of the experimenter in the recording room. The interval of time between the actual appearance of the light and the moment the key is tapped is accurately measured. For a while nothing but the red light is used, this to obtain the simple reaction time. Then red

and yellow lights are turned on in irregular succession. The person has now to discriminate between two colors, and to choose between action and nonaction. The increase of time required over the simple reaction time gives the discrimination time for two colors. In another set of experiments three colors are used; then four colors. As the discrimination and choice become more complicated, more time is required.

The importance of rapid and accurate reaction and discrimination is evident. Astronomers have difficulty in recording the moment at which a star passes a line in the telescope. The sportsman must pull the trigger at just the proper moment. The football player, the fencer, and the boxer are trained in rapidity of discrimination and reaction. It is very evident that a player or a pugilist who takes a long time for discrimination, choice, and volition will give a decided advantage to a quick opponent.

A most interesting subject of psychological work is the association of ideas. While passing along the street you catch a glimpse of good things to eat in a restaurant window, and at once you remember the fine dinner you had yesterday. I say "at once," but the association is really not instantaneous, a few thousandths of a second elapse before your sight of the food and the memory of the dinner. The extra time required for an associated idea to rise is called the association time. You may wonder how we can measure this time. The only proper thing to do is to go to a laboratory and see it done. Nevertheless I can perhaps indicate with sufficient clearness the method of operation. Suppose I have obtained, in the manner previously explained, your simple reaction time, discrimination time, and choice time for visible objects, e. g. pictures. Now, if on seeing a picture you do not react at once, but on the contrary wait for some idea to associate itself before doing so, you have added the process of association. If you subtract the time required in the former case from the time required when association is added, you will get the association time.

The practical importance of a more careful use of our knowledge of association time is evident. A man who can think twice as fast as another will live just twice as long, although he will live just the same number of years. To-day mental phenomena occur at a much more rapid rate than they occurred a century ago. The difference between the sluggish Englishman of mediæval times and the quick Yankee of to-day is delightfully told in Mark Twain's "King Arthur." If it were possible to bring Sir Launcelot into the laboratory, his association time would be found to be much longer than that of a trained Yale graduate. When the country boy first comes to the schoolroom every mental act, every thought requires a longer time than it will require after proper training. Arithmetic is mainly a matter of association of ideas. So much time is given for doing a problem; at a signal all pencils must be dropped. The children are taught that slowness of thought means failure.

Another fruitful line of investigation is that of time memory. How can we train this ability in the best way? Rhythmic action, for example, involves time memory and reaction time. The conditions of greatest accuracy, the individual differences, the most common faults, the best methods of correcting them, can all be determined without difficulty. What is rhythmic action from a practical point of view? It is keeping step in marching and dancing, keeping time in playing musical instruments and singing, pulling an oar in exact time with the stroke. A proper knowledge of the laws of rhythmic action might make a change in the winning of a boat race. I respectfully suggest to the oft-defeated Harvard crew that they all take a course in experimental psychology with special attention to reaction time and time memory. Indeed, it might not be a bad thing to give all our college boys a little more mental training. If psychology is practically applied in this way the bulletins of the twentieth century may read in this fashion: "Yale was at this time half a length ahead, but gradually fell behind for some reason. After the race an examination of the automatic record made by each oar revealed that the rhythmic movements of No. 2's oar had dropped below the required regularity. The mean error from the average was great enough to cause a decided loss of power." We may also read: "Mr. B., of the Chicago eleven, has lately made several bad plays in passing the ball. Tests at the psychological laboratory revealed a large increase in discrimination time." Again, "The noted sprint runner, X, has a reaction time of 0.13 of a second, which gives him an advantage of more than 0.1 second over his competitor." Many a truth is spoken in jest. Such a recording apparatus for oarsmen has been planned, but has not been carried out because of the expense of preliminary experiments. Records on the reaction time of runners have been made in my laboratory.

The subject of voluntary motor ability is at present one of the most rapidly advancing departments of psychology. Given the will, or the volition, to perform an act, what will be the result? Our rapidity and accuracy of action depend on attention, fatigue, and habit. Rapidity is required by the typewriter, the typesetter, the stenographer, the violin and piano player, the runner, and even the cigarette



girl, who works by the piece. Accuracy is the essential for the mechanic, the carpenter, the draftsman, the chemist, the billiard player, the blacksmith, and endless others. Gracefulness in voluntary action is the proper adjustment of rapidity and extent of movement; it is almost entirely a psychological affair. Gracefulness is the condition *sine qua non* for the artist, the decorator, the orator, the actor, the dancer, and every society man and woman.

What would be more natural than for such persons to inquire of psychology concerning the laws covering rapidity, accuracy, and gracefulness? Since the advent of the new psychology such inquiries do not remain entirely unanswered. What a mistake it is to train a child to an occupation for which he has no qualifications! No one would expect a color-blind boy to become a great artist, or a girl with a swelling on the vocal cord to become a great singer. Yet we never think of inquiring if the boy who is studying to be a telegraph operator or the girl who goes to the expense of learning typewriting can possibly succeed. There are certain boys mentally and bodily so constituted that the manipulation of the telegraph key is almost certain, sooner or later, to end in the telegrapher's cramp, which puts an end to all future use of the key. There are girls so constituted that the mental processes involved in typewriting can never be made to go fast enough to insure a respectable living. There are mechanics who can never obtain sufficient control over their fingers to do any accurate work.

I received not long ago a letter calling attention to the fact that large numbers of compositors were being thrown out of work by the introduction of typesetting machines. The question was asked, Could the psychologists give information regarding the qualities necessary for a successful operator of these machines? I suppose the idea was to test the men before encouraging them to learn a new trade. I am almost ashamed to repeat the reply that I was forced to give to one of the first practical bread-and-butter questions that have ever been put to the psychologist. The only reply possible was that we had in our laboratories the means of investigating and measuring nearly every mental and physical element involved in the case, e. g., action, reaction, discrimination, association, attention, fatigue; that numberless investigations on just those elements had been made; that with a machine and a man to experiment on we could give clear and definite replies on every point, but that no psychologist had ever thought it worth while to inquire how rapidity and accuracy in mental operations could be developed by training.

The judgment of distances by the eye has received much attention. Suppose we take a line with two dots on it and try to put another dot on it just half way between the two. An error is made every time. The average of the errors made in a set of experiments is characteristic of the person making them. It will vary with different persons, different training, fatigue, worry, inattention, and so on. The practical man or woman must seek to reduce this error as much as possible. Every free-hand artist, decorator, sign painter, tinsmith, and bricklayer depends for his success on his accuracy of eye. A surgeon with a large average error will be liable to cut an artery that ought not to be touched; a seamstress will make uneven stitches. More than half the value of manual training lies in the education of the eye in this respect.

I have thus far apparently had little to say of the directly educational applications of psychology. The reason is this: By education we usually mean the word-cram and mind-deformation that characterize many of our schools, whereas we ought to include every lesson, exercise, game, play, sport, or occupation that develops and improves our mental and bodily powers. There is as much education in playing (not in watching) a game of football as in construing a book of Virgil. Who will say that training in rhythmic action and gracefulness shall not have places in school beside percentage and syntax? The close connection that has arisen between the psychological laboratory and the gymnasium is an event whose importance can not be fully foreseen. The education of men, instead of bookworms and mummies, will perhaps find, as it found in Greece, one of its chief exponents in the mental and physical training of the gymnasium.

The new psychology has not hitherto bothered itself with practical affairs, and has left the old psychology in full possession of the schools. Being convinced that the future of laboratory psychology in America depends on the recognition of its value in practical school work, I set one of the members of the laboratory at work on an extensive investigation of the laws of mental development in school children. This subject was chosen as being the first object of attack; for before we can with clear consciences attempt to train the mental abilities of the child we must know how the child's mind acts and how it grows. Considerable work has been done on very young children, but although the school children have been repeatedly measured in height, weight, and so on, their mental powers were uninvestigated. We have for the first time carried out careful measurements on the mental abilities of school children. The experiments include color discrimination, muscle sense, reaction time, discrimination time, time memory, suggestibility, rapidity of repeated movement, fatigue in voluntary movement, and the usual three physical measure-



ments. The results, when arranged according to age, show new and unexpected laws of mental development.

There is another way in which experimental psychology can be directly serviceable to education. It is possible in many cases to determine by actual experiment the best methods to be used in instruction. Suppose, for example, that a number of foreign words are to be associated with a number of English words; it is not enough for the educator to know how this is usually done, he must know how to learn to do it in the shortest time and with the least effort. With this in view I once made a few experiments, not with the idea of obtaining any definite results, but merely to try if there might not be a way of "experimental education." On each of eight cards I pasted a picture and a Japanese word in ordinary roman letters; on eight more I put a German word (the experiments were made in Leipzig) and a Japanese word. These were shown successively several times to another person. Two days afterwards half of each card was shown him, and he was asked to tell what was on the other half—e. g., he saw a picture, and had to give the Japanese word belonging to it. The results, for which I do not in the least claim scientific accuracy, can be arranged as follows: When the picture was shown alone and the word demanded, the correct answer was given three times out of eight; when the German word was shown, not a single time could the Japanese word be given; when the Japanese word was shown and the picture demanded, it was correctly given in every case but one, whereas the Japanese word was able to call up a German word only three times out of eight. Now suppose that this series of experiments, instead of being limited to a single occasion, had been extended till the results could claim the authority of numbers, then we could lay down the law that in teaching the vocabularies of foreign languages more than threetimes as rapid progress can be made by learning from pictures as from merely placing the words side by side. That is what everybody would expect; but, although we have Ollendorff's, Ahn's, and a dozen more, no one has yet produced a reading book of a foreign language in which the vocabulary is taught by arranging the words beside little pictures.

Now that the new psychology has opened the way in a new education, we may hope that, before long, thoroughly scientific methods of instruction will be introduced; that the worthless subjects taught will give place to a training where all the powers of mind will be properly cultivated; that the pounding of facts into the children will be replaced by a gentle but thorough development of their natural abilities—in short, that school will no longer be a blight to child life, but a fostering institution in which our boys and girls will bloom into full manhood and womanhood, fitted to be citizens of our country and to succeed in the pursuits and occupations that await them.

It is a trite saying that education must be based on psychology, but no one familiar with our present educational methods would suspect that the fact had ever been discovered. Scientific psychologists have not troubled themselves about every day practical affairs, and educators have been content with the antiquated English and German psychology served up to them. The unbroken series of magnificent discoveries of experimental psychology are unknown outside of a limited circle, and Herbartian psychology is considered the very newest thing for educators. Now, Herbart was the John the Baptist of the new psychology, and to him more than to any psychologist of the past, except Sir William Hamilton, do we owe the freedom of psychology from mystical metaphysical shackles—the freedom that rendered the very existence of a science of psychology possible. But Herbart died in 1841, and the last edition of his great work on psychology was published in 1834. Think of using a text-book on chemistry printed sixty years ago! Would you for a bodily ailment call in a physician to whom the medical discoveries of the last half century were unknown? The very spirit of Herbart was against such stagnation; his true disciples are not to be found in the ranks of slavish readers of his works, but in our laboratories. Although an experimentalist in the strictest sense, I, at least, am willing to go on record as an ardent admirer of his inestimable services to psychology and pedagogy. As for the English psychology, the less said the better.

The new psychology has arisen within the last forty years. From Aristotle and the Stoics to Fechner, Helmholtz, and Wundt, there is practically an unfilled gap in the history of psychology. The subject shows, as education must also soon show, the influence of the modern scientific awakening that has already transformed mathematics, physics, and chemistry from scholastic disputations into live sciences.

Twenty or thirty years ago it was supposed that a short cut to a knowledge of mental life had been found in physiological experiments and brain dissections. Cerebral physiology, however, has contributed nothing whatever to introspective psychology. On the contrary, physiological psychology—that more interesting of all sciences which treats of the relations of mind and brain—presupposes not only a minute anatomical knowledge of the brain, but also a well-developed introspective psychology with carefully ascertained and accurately measured facts. The confusion of the psychological laboratory with neurological laboratory, and of experimental

psychology with physiological psychology, has led to the popular belief that we experimentalists are merely disguised materialists. This belief has been fostered by many nonpsychological writers.

The fundamental method of the new or laboratory psychologists does not differ from the method of Aristotle, namely, direct observation of facts. Galileo modified this method for physics by introducing careful experiment and measurement; Fechner did the same for psychology. The characteristic of the new psychology does not lie in supplanting introspection by some materialistic theory, but in the substitution of accurate and trustworthy introspective methods for the guesswork and speculation of the past.

To the seeker for knowledge the mediæval psychology had nothing to offer but vague and wordy discussions of the ego, the self, the nature of mind, the continuity of consciousness during sleep, etc., which were as far removed from affairs as mediæval metaphysics. We Americans are a practical people and apply the standard of usefulness even in scientific pursuits. The new psychology, however, is not afraid of being tested in this way. With the proper laboratory equipment (we need as good accommodations and apparatus as a physical laboratory) and with enough earnest scientific workers (of whom we have not half enough), we can do as much for education and mental life in general as physics does for railroads, bridges, and electrical engineering. (E. W. Scripture, in *The Forum*.)

#### EDUCATION BY PLAYS AND GAMES.

One of the most important recent contributions to the literature of child-life study is the monograph on education by plays and games, by G. E. Johnson, of Clark University. The paper presents a list of 440 plays and games, accompanied by the writer's estimate of their nature as instruments of mental and physical training.

In his introduction, the author says as to the nature of play per se:

“‘Play is the first poetry of the human being. It is the working off at once of the overflow of both mental and physical powers.’ Thus Richter defines play. Froebel says it is the self-active representation of the inner from inner necessity and impulse. The distinctive characteristic of play is spontaneity. In the above, Richter emphasizes the spontaneity which is dependent upon physical conditions. Froebel, that which is dependent upon the mental attitude. In the healthy child there is a constant storing up and expenditure of energy. The overfilled or rested cells must discharge. They may be likened to an intermittent spring which, becoming so full, must empty. This rhythmic sequence of anabolism and katabolism seems to be nature's method of activity for the securing of growth and development. When katabolism follows spontaneously upon completed anabolism, the discharge is accompanied with pleasure. This is the exuberance of life which impels the young child to leap and dance with no apparent object but that of motion. The very discharge is a joy, a relief. When anabolism is incomplete and katabolism takes place, or when katabolism is induced by force of will or fear, the accompanying consciousness is one of unpleasantness or pain. Compel a child to jump rope after fatigue has set in, and it is no longer pleasurable but painful. Spontaneity is gone.

“The mental attitude is no less important than the physical conditions in the spontaneity of an activity. The physical conditions being favorable, the distinction between play and what is not play is wholly subjective, a question of ‘mental attitude.’ Just what this mental attitude is, is not easy to define. It is often capricious. It is coincident with an expectation of pleasure. Mark Twain gives an illustration in ‘How Tom Sawyer got his fence whitewashed.’ Whitewash was grinding drudgery to Tom, but when anticipations of pleasure had been aroused in his playmates and they had taken the brush at the sacrifice of sundry trinkets, whitewashing had become play. It generally involves imagination. To Mr. Bolton is due this story of a stone pile which a father found much difficulty in getting his boys to remove: Two weeks had passed and the pile had not perceptibly diminished. Kindling a brush fire in the ditch where the stones were to be thrown, and improvising a fire engine out of a cart, he exclaimed: ‘Come, boys, here's a fire! Let's be firemen and put it out. This is the engine and these are buckets of water (pointing to the stones). Come on!’ And, with shouting and whistling and puffing, the stones



were dragged and dumped until the pile had disappeared.<sup>1</sup> There is always an accompanying mental excitement which, especially in games, is largely due to an uncertainty in the outcome. Take this entirely out of a game and the play becomes insipid monotony. On the other hand, I have known a boy to relieve truly drudging labor by fixing beforehand the amount to be done at a certain hour and racing against time. It must await present interest. Compel a boy to continue quietly his game of marbles after an alarm of fire has sounded in his neighborhood and play has changed to labor.

"In play, pleasure always accompanies the activity. There may or may not be some additional reward resulting from the activity. In labor, the reward does not accompany but follows the activity. A boy plays ball and pleasure attends every movement. There may also result greatly improved health and skill of hand and eye, sometimes even a pecuniary reward. A boy saws wood and the reward is the increase of strength and the money received. Work (effort directed to an end—Webster) is involved in both, generally to a greater degree in play."

Passing then to the educational importance of play, the author continues:

"A clear understanding of the nature of play is of the highest importance to teachers. Play is deserving of better repute than that in which it is sometimes held, and labor receives often a praise that is hardly due. There is no virtue in labor for the sake of labor any more than there is virtue in self-denial for self-denial's sake, or virtue in being miserable. Work is the honor term. Every good thing accomplished in life is accomplished by work, but this work may often be the work of play quite as well as the work of labor. Work does not thereby accomplish more because it is laborious and irksome. As Dr. Brinton says: 'The measure of value of work is the amount of play there is in it, and the measure of value of play is the amount of work there is in it.'

"From the very fact that joyousness aids the anabolic processes, while pain retards, the more play the more work and the more power to work, the more labor the less work and the less power to work. Every effort to make attractive and interesting the school work of children, every effort to bring the order of studies into line with the child's present interest and stage of development, is a recognition of this. For the success of teaching, both as to amount of knowledge acquired and the discipline received, it is essential that there be all possible play in the work. Nobody will deny that the intensity of the activity in any exercise and the beneficence of its results increase with the pleasure involved. It is a platitude to say that no one ever made marked progress in a study he detested, or rose high in a profession he never enjoyed. The men who have stood high have been those who played, as well as plied their trades and professions. Stupidity is but another name for ennui, and brightness for interest. 'All work and no play makes Jack a dull boy,' is as true a pedagogical aphorism as ever was written. To acquire alert minds children must be alert, and the young child can be alert only as his play instinct is aroused. Shut out the play instinct of a young child and you stunt his growth; neglect to draw it out and you lessen his possibilities for strength.

"It is to be regretted that in our public school system the play instinct of the child does not find more room for expression. In many schools the office of the playground is to counteract the stultifying effects of the schoolroom. 'If,' as Schiller says, 'man is wholly man only when he plays,' we err in hoping to make a child more of a man while we force him from the truest expression of himself.

"It will no doubt be objected that the child should early be taught to distinguish between play and labor and bravely undergo the latter, for he must labor and not play through life; that great men have always, 'while others slept, toiled upward in the night.' Certainly work must be done at all hazards; if not in play, then in

<sup>1</sup>This story was taken from the records of children in possession of the Graduates' Association of the State Normal School at Worcester, Mass.



labor. But the child should not be led to expect a life of toil. Rather he should be taught that a life of play-work is the ideal, and that it is his privilege to seek it.

"There is no proof that great men 'toiled upward in the night,' except as they were borne over the drudgery in the eagerness of their interest, as a tennis player again and again 'shacks' the widely-batted tennis ball. It was the labor involved in play. It is doubtful if a great man ever accomplished his life work without having reached a play interest in it. The power of work and endurance said to be acquired by the conscientious student in undergoing drudgery never equals that which is his when his work is no longer labor, but play. Mr. Yoder, in his *Study of the Boyhood of Great Men*, shows that as boys they not only revolted sometimes against the routine of uninteresting work and followed their own inclinations, but, much more, they found play in a work or work in a play that disciplined those powers which made them famous as men. Dickens playing for days that he was some character of whom he had read, Darwin with his passion for collections, Stephenson with his boilers, Tennyson and Emerson writing rhymes for fun, Washington playing soldier, Kingsley preaching little sermons, Miss Alcott with pencil and paper, are illustrations.

"Much has been said by educators in regard to the importance of the play instinct in education. Plato: 'Education should begin with the right direction of children's sports.'<sup>1</sup> 'The plays of children should be subject to laws.'<sup>2</sup> 'The plays of children should be along the line of their future occupations.'<sup>1</sup> 'Do not use compulsion, but let education be a sort of amusement.'<sup>3</sup> Aristotle: 'Children should have entertaining employment.'<sup>4</sup> Quintilian: 'Instruction should be amusing to the child.' Fenelon: 'Plays are efficacious in education.'<sup>5</sup> Rabelais: 'Studies should be made amusing and interesting.' Locke: 'The chief art is to make all that children have to do sport and play.'<sup>6</sup> Richter: 'The plays of children are as serious and full of meaning in themselves and in reference to their future as ours are to us.'<sup>7</sup> Froebel:<sup>8</sup> 'Play is the purest, most spiritual activity of men at this stage, and at the same time typical of human life as a whole, of inner hidden natural life in men and all things. It holds the sources of all that is good. The plays of children are the germinal leaves of all later life.'"

<sup>1</sup>Laws, I, 643.

<sup>2</sup>Laws, VII, 797.

<sup>3</sup>Rep., VII, 537.

<sup>4</sup>Pol. Book, VII, 17.

<sup>5</sup>For this and following see translator's note, Froebel's *Education of Man*, International Education Series, pp. 22, 23.

<sup>6</sup>Locke, as well as Basedow, invented games for teaching letters and reading, and suggested others.

<sup>7</sup>Levana, Chap. III, Frag. III.

<sup>8</sup>Education of Man, § 30.

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## CHAPTER XI.

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## CHAPTER XII.

### NAME REGISTER.<sup>1</sup>

#### I.—CHIEF STATE SCHOOL OFFICERS.

Name.	Address.	Official designation.
John O. Turner.....	Montgomery, Ala .....	State superintendent of education.
Sheldon Jackson.....	Sitka, Alaska .....	General agent of education.
F. J. Netherton.....	Mesa, Ariz.....	Superintendent of public instruction.
Junius Jordan.....	Little Rock, Ark.....	State superintendent of public instruction.
Samuel T. Black.....	Sacramento, Cal .....	Do.
Mrs. A. J. Peavey.....	Denver, Colo .....	Do.
C. D. Hine.....	Hartford, Conn .....	Secretary of State board of education.
C. C. Tindal.....	Dover, Del.....	Do.
W. B. Powell.....	Washington, D. C.....	Superintendent of District schools.
W. N. Sheats.....	Tallahassee, Fla .....	State superintendent of public instruction.
Gustavus R. Glenn .....	Atlanta, Ga.....	State school commissioner.
C. A. Forseman .....	Boise City, Idaho.....	State superintendent of public instruction.
Samuel M. Inglis .....	Springfield, Ill.....	Do.
D. M. Geeting .....	Indianapolis, Ind .....	Do.
Henry Sabin .....	Des Moines, Iowa.....	Do.
Edmund Stanley .....	Topeka, Kans.....	Do.
Ed. Porter Thompson...	Frankfort, Ky .....	Do.
A. D. Lafargue.....	Baton Rouge, La .....	State superintendent of education.
W. W. Stetson.....	Augusta, Me.....	State superintendent of common schools.
E. B. Prettyman.....	Baltimore, Md .....	State superintendent of public instruction.
Frank A. Hill .....	Boston, Mass .....	Secretary of State board of education.
Henry R. Pattengill....	Lansing, Mich .....	State superintendent of public instruction.
W. W. Pendergast.....	St. Paul, Minn .....	Do.
J. R. Preston .....	Jackson, Miss .....	State superintendent of education.
John R. Kirk .....	Jefferson City, Mo .....	State superintendent of public schools.
E. A. Steere.....	Helena, Mont .....	State superintendent of public instruction.
H. R. Corbett.....	Lincoln, Nebr .....	Do.
H. C. Cutting.....	Carson City, Nev.....	Do.
Fred. Gowing.....	Concord, N. H.....	Do.
A. B. Poland.....	Trenton, N. J.....	Do.

<sup>1</sup> Including all changes reported to the Bureau up to May, 1895.

## I.—CHIEF STATE SCHOOL OFFICERS—Continued.

Name.	Address.	Official designation.
Amado Chaves .....	Sante Fe, N. Mex.....	Superintendent of public instruction.
Charles R. Skinner .....	Albany, N. Y.....	State superintendent of public instruction.
John C. Scarborough ...	Raleigh, N. C.....	Do.
Miss Emma F. Bates.....	Bismarck, N. Dak.....	Do.
Oscar T. Corson .....	Columbus, Ohio .....	State commissioner of common schools.
E. D. Cameron.....	Guthrie, Okla.....	Superintendent of public instruction.
G. M. Irwin .....	Salem, Oreg.....	State superintendent of public instruction.
Nathan C. Schaeffer.....	Harrisburg, Pa.....	Do.
Thomas B. Stockwell ...	Providence, R. I.....	Commissioner of public schools.
W. D. Mayfield.....	Columbia, S. C.....	State superintendent of education.
Frank Crane .....	Pierre, S. Dak.....	State superintendent of public instruction.
Frank M. Smith .....	Nashville, Tenn.....	State superintendent of public schools.
J. M. Carlisle.....	Austin, Tex.....	State superintendent of public instruction.
T. B. Lewis .....	Ogden, Utah.....	Commissioner of schools.
Mason S. Stone .....	Montpelier, Vt.....	State superintendent of education.
John E. Massey .....	Richmond, Va.....	State superintendent of public instruction.
C. W. Bean .....	Olympia, Wash.....	Do.
Virgil A. Lewis.....	Charleston, W. Va.....	State superintendent of free schools.
J. Q. Emery .....	Madison, Wis.....	State superintendent of public schools.
Miss Estelle Reel.....	Cheyenne, Wyo.....	State superintendent of public instruction.

## II.—CITY SUPERINTENDENTS.

## ALABAMA.

Anniston, H. C. Gunnels. <sup>1</sup>	Huntsville, Sydney J. Mayhew.
Bessemer, W. H. Harwell.	Mobile, John D. Yerby.
Birmingham, J. H. Phillips.	Montgomery, C. L. Floyd.
Eufaula, William D. Jelks.	Selma, Louis E. Jeffries.
Florence, H. C. Gilbert.	Tuscaloosa, James H. Foster.

## ARIZONA.

Tucson, ————.

## ARKANSAS.

Fort Smith, J. L. Holloway.	Little Rock, J. R. Rightsell.
Helena, John Caldwell Davidson.	Pine Bluff, Mrs. Ruth McBride.
Hot Springs, George B. Cook.	

<sup>1</sup> Principal.



## CALIFORNIA.

Alameda, D. J. Sullivan.  
 Berkeley, S. D. Waterman.  
 Eureka, G. W. Warren.  
 Fresno, T. L. Heaton.  
 Los Angeles, P. W. Search.  
 Napa City, J. L. Shearer.<sup>1</sup>  
 Oakland, J. W. McClymonds.  
 Pasadena, James D. Graham.  
 Riverside, Eli F. Brown.  
 Sacramento, O. W. Erlewine.

San Bernardino, W. Scott Thomas.  
 San Diego, Eugene De Burn.  
 San Francisco, Andrew J. Moulder.  
 San Jose, Frank P. Russell.  
 Santa Barbara, C. Y. Roop.  
 Santa Cruz, D. C. Clark.  
 Santa Rosa, Frederic L. Burk.  
 Stockton, James A. Barr.  
 Vallejo, L. G. Harrier.

## COLORADO.

Aspen, John F. Keating.  
 Colorado Springs, P. K. Pattison.  
 Denver: District No. 1, Aaron Gove.  
           District No. 2, L. C. Greenlee.  
           District No. 17, J. H. Van  
           Sickle.

Leadville, J. P. Jackson.  
 Pueblo: District No. 1, James S. Mc-  
           Clung.  
           District No. 20, H. E. Robbins.  
 Trinidad, Eugene C. Stevens.

## CONNECTICUT.

Ansonia, W. H. Angleton.  
 Bridgeport, Charles W. Deane.  
 Bristol, James F. Williams.  
 Danbury, A. C. Hubbard.<sup>2</sup>  
 Derby, J. W. Peck.  
 Enfield, James B. Houston.<sup>2</sup>  
 Greenwich, George P. Fisher.  
 Hartford, John H. Brocklesby.  
 Manchester, Robert P. Bissell.  
 Meriden, J. T. Pettec.  
 Middletown, Walter B. Ferguson.  
 New Britain, J. N. Bartlett.

New Haven, Virgil G. Curtis.  
 New London, Charles B. Jennings.<sup>3</sup>  
 Norwalk, Charles Olmstead.<sup>2</sup>  
 Norwich, N. L. Bishop.  
 Rockville, I. M. Agard.  
 Stamford, Everett C. Willard.  
 Torrington, Edwin H. Forbes.  
 Wallingford, Daniel R. Knight.<sup>4</sup>  
 Waterbury, M. S. Crosby.  
 Windham, George L. Storrs.<sup>2</sup>  
 Winchester, George F. Prentiss.<sup>2</sup>

## DELAWARE.

New Castle, Allen H. Knapp.

Wilmington, David W. Harlan.

## DISTRICT OF COLUMBIA.

Washington, William B. Powell (super-  
 intendent of public schools).

Washington, G. F. T. Cook (superin-  
 tendent of colored schools).

## FLORIDA.

Jacksonville, Joel D. Mead.<sup>5</sup>  
 Key West, C. F. Kemp.<sup>5</sup>  
 Pensacola, N. B. Cook.<sup>5</sup>

St. Augustine, Walter E. Knibloe.  
 Tampa, L. W. Buchholz.<sup>5</sup>

## GEORGIA.

Albany, J. S. Davis.  
 Americus, William Harper.  
 Athens, G. G. Bond.  
 Atlanta, W. F. Slaton.  
 Augusta, Lawton B. Evans.  
 Brunswick, A. I. Branham.

Columbus, Homer Wright.  
 Griffin, Bothwell Graham.  
 Macon, D. Q. Abbott.  
 Rome, James C. Harris.  
 Savannah, W. H. Baker.  
 Thomasville, K. T. MacLean.<sup>5</sup>

<sup>1</sup> Principal.

<sup>2</sup> Secretary board of school visitors.

<sup>3</sup> Acting school visitor.

<sup>4</sup> Superintendent of central district.

<sup>5</sup> County superintendent.

## ILLINOIS.

Alton, Robert A. Haight.	Freeport, F. T. Oldt.
Aurora: District No. 5 (East Side), J. H. Freeman.	Galena, I. C. Baker.
District No. 4 (West Side), A. V. Greenman.	Galesburg, William L. Steele.
Austin, Newell D. Gilbert.	Jacksonville, John R. Long.
Beardstown, M. Moore.	Joliet, ————.
Belleville, H. D. Updike.	Kankakee, F. N. Tracy.
Bloomington, E. M. Van Petten.	Kewanee, E. C. Rosseter.
Braidwood, C. F. Van Doren.	La Salle, L. A. Thomas.
Cairo, Taylor C. Clendenen.	Lincoln, A. L. Anderson.
Canton, C. M. Bardwell.	Litchfield, J. E. Bryan.
Centralia, D. W. Creckmur.	Macomb, S. F. Hall.
Champaign, C. A. Bowsher.	Mattoon, B. F. Armitage.
Charleston, J. W. Henninger.	Moline, H. M. Slauson.
Chicago, Albert G. Lane.	Monmouth, James C. Burns.
Danville, Joseph Carter.	Oak Park, W. H. Hatch.
Decatur, E. A. Gastman.	Ottawa, ————.
Dixon, W. H. Williamson.	Pana: West Side, L. S. Ham. <sup>2</sup>
Duquoin, J. E. Wooters.	East Side, W. T. Gooden. <sup>2</sup>
East St. Louis: District No. 1, James P. Slade.	Paris, W. W. Black.
District No. 2, range 9, Harry Todd. <sup>1</sup>	Pekin, F. W. Reubelt.
District No. 2, range 10, T. J. McDonough. <sup>1</sup>	Peoria, Newton Charles Dougherty.
Elgin, H. F. Derr.	Peru, Fred. W. Smedley.
Evanston: District No. 1, Homer H. Kingsley.	Quincy, T. W. Macfall.
District No. 2, F. W. Nichols.	Rock Island, S. S. Kemble.
District No. 3, A. J. Snyder.	Rockford, P. R. Walker.
	Springfield, J. H. Collins.
	Sterling: District No. 1, W. T. Tuttle.
	District No. 3, H. L. Chaplin.
	District No. 8, S. B. Hurst.
	Streator, J. N. Patrick.
	Waukegan, Frank H. Hall.

## INDIANA.

Anderson, John W. Carr.	Lawrenceburg, W. H. Rucker.
Bloomington, D. W. Leonard.	Logansport, Albert H. Douglass.
Brazil, John C. Gregg.	Madison, David M. Geeting.
Columbus, John A. Carnagey.	Marion, W. D. Weaver.
Connersville, W. F. L. Sanders.	Michigan City, Edward Boyle.
Crawfordsville, Isaac M. Wellington.	Mount Vernon, H. P. Leavenworth.
Elkhart, D. W. Thomas.	Muncie, W. R. Snyder.
Evansville, William A. Hester.	New Albany, W. H. Hershman.
Fort Wayne, John S. Irwin.	Peru, W. R. J. Stratford.
Frankfort, Benjamin F. Moore.	Richmond, Justin N. Study.
Goshen, William H. Sims.	Seymour, H. C. Montgomery.
Greencastle, Robert A. Ogg.	Shelbyville, J. H. Tomlin.
Hammond, W. C. Belman.	South Bend, Calvin Moon.
Huntington, Robert I. Hamilton.	Terre Haute, William H. Wiley.
Indianapolis, D. K. Goss.	Valparaiso, William H. Banta.
Jeffersonville, P. P. Stultz.	Vincennes, Albert E. Humke.
Kokomo, H. G. Woody.	Wabash, M. W. Harrison.
La Fayette, Edward Ayres.	Washington, W. F. Axtell.
Laporte, James F. Knight.	

<sup>1</sup> Principal.<sup>2</sup> Supervising principal.

## IOWA.

Atlantic, H. G. Lamson.  
 Boone, George I. Miller.  
 Burlington, Charles Eldred Shelton.  
 Cedar Rapids, J. F. Merrill.  
 Clinton, O. P. Bostwick.  
 Council Bluffs, Hugh W. Sawyer.  
 Creston, H. B. Larrabee.  
 Davenport, J. B. Young.  
 Des Moines: East Side, Amos Hiatt.  
                   West Side, Frank B. Cooper.  
                   North Side, O. E. Smith.  
 Dubuque, Thomas Hardie.<sup>1</sup>  
 Fort Dodge, F. C. Wildes.

Fort Madison, C. H. Morrill.  
 Iowa City, W. F. Cramer.  
 Keokuk, O. W. Weyer.  
 Le Mars, E. N. Coleman.  
 Lyons, E. T. Fitch.  
 Marshalltown, C. P. Rogers.  
 Mason City, A. R. Sale.  
 Muscatine, F. M. Witter.  
 Oskaloosa, Orion C. Scott.  
 Ottumwa, A. W. Stuart.  
 Sioux City, H. E. Kratz.  
 Waterloo: East Side, F. J. Sessions.  
                   West Side, George A. Bateman.

## KANSAS.

Argentine, Charles R. Sator.  
 Arkansas City, T. W. Conway.  
 Atchison, J. H. Glotfelter.  
 Emporia, John Dietrich.  
 Fort Scott, Guy P. Benton.  
 Hutchinson, George W. Winans.  
 Junction City, George W. Kendrick.  
 Kansas City, L. L. L. Hanks.  
 Lawrence, Edmund Stanley.  
 Leavenworth, James E. Klock.

Newton, J. W. Cooper.  
 Ottawa, Frank P. Smith.  
 Parsons, ————.  
 Pittsburg, D. A. Cooper.  
 Salina, ————.  
 Topeka, William M. Davidson.  
 Wellington, H. F. M. Bear.  
 Wichita, William Richardson.  
 Winfield, J. W. Spindler.

## KENTUCKY.

Ashland, John G. Crabbe.  
 Bowling Green, W. B. Wylie.  
 Covington, W. C. Warfield.  
 Dayton, R. M. Mitchell.  
 Frankfort, McHenry Rhoads.  
 Henderson, Edward S. Clark.  
 Hopkinsville, Charles H. Dietrich.  
 Lexington, William Rogers Clay.

Louisville, George H. Tingley, jr.  
 Maysville, J. H. Blatterman.  
 Newport, John Burke.  
 Owensboro, James McGinniss.  
 Paducah, George O. McBroom.  
 Paris, E. W. Weaver.  
 Richmond, J. D. Clark.  
 Winchester, C. E. Lyddane.<sup>2</sup>

## LOUISIANA.

Baton Rouge, Fred J. Tunnard.<sup>3</sup>  
 New Orleans, Warren Easton.

Shreveport, John L. Hargrove.

## MAINE.

Auburn, W. W. Stetson.  
 Augusta, J. Frank Leland.<sup>4</sup>  
 Bangor, Miss Mary S. Snow.  
 Bath, J. C. Phillips.  
 Belfast, O. C. Evans.  
 Biddeford, Royal E. Gould.  
 Brewer, George Curtis.  
 Calais, S. E. Webber.

Ellsworth, E. W. Lord.  
 Gardiner, James M. Larrabee.<sup>4</sup>  
 Lewiston, W. W. Stetson.  
 Portland, Orlando M. Lord.  
 Rockland, John R. Dunton.  
 Saco, John S. Locke.  
 Waterville, J. H. Blanchard.

<sup>1</sup> Secretary of the board of education.

<sup>2</sup> County superintendent.

<sup>3</sup> Parish superintendent.

<sup>4</sup> Supervisor.



## MARYLAND.

Annapolis, John C. Bannon.<sup>1</sup>  
 Baltimore, Henry A. Wise.  
 Cambridge, James L. Bryan.<sup>1</sup>

Cumberland, H. G. Weimer.<sup>1</sup>  
 Frederick, Ephraim L. Boblitz.<sup>1</sup>  
 Hagerstown, George C. Pearson.<sup>1</sup>

## MASSACHUSETTS.

Adams, Walter P. Beckwith.  
 Amesbury, Frank Savage.<sup>2</sup>  
 Attleboro, J. O. Tiffany.  
 Beverly, Adelbert Leon Safford.  
 Boston, Edwin P. Seaver.  
 Brockton, B. B. Russell.  
 Brookline, Samuel T. Dutton.  
 Cambridge, Francis Cogswell.  
 Chelsea, Eben H. Davis.  
 Chicopee, R. H. Perkins.  
 Clinton, Charles L. Hunt.  
 Danvers, W. A. Baldwin.  
 Dedham, Roderick Whittelsey Hine.  
 Everett, Randall J. Condon.  
 Fall River, William C. Bates.  
 Fitchburg, Joseph G. Edgerley.  
 Framingham, Orville W. Collins.  
 Gardner, Louis P. Nash.  
 Gloucester, Freeman Putney.  
 Haverhill, Albert L. Bartlett.  
 Holyoke, Edwin L. Kirtland.  
 Hyde Park, Richard M. Johnson.<sup>3</sup>  
 Lawrence, John E. Burke.  
 Lowell, Arthur K. Whitcomb.  
 Lynn, Orsamus B. Bruce.  
 Malden, Charles A. Daniels.  
 Marblehead, Henry M. Walradt.

Marlboro, B. W. Tinker.  
 Medford, Ephraim Hunt.  
 Melrose, Benjamin F. Robinson.  
 Milford, S. F. Blodgett.  
 Natick, Frank E. Parlin.  
 New Bedford, William E. Hatch.  
 Newburyport, William P. Lunt.  
 Newton, George I. Aldrich.  
 North Adams, Mrs. Julia M. Dewey.  
 Northampton, Alvin F. Pease.  
 Peabody, John B. Gifford.  
 Pittsfield, Eugene Bouten.  
 Plymouth, Francis J. Heavens.  
 Quincy, H. W. Lull.  
 Salem, John W. Perkins.  
 Somerville, Gordon A. Southworth.  
 Southbridge, John T. Clarke.  
 Spencer, Wyman C. Fickett.  
 Springfield, Thomas M. Balliet.  
 Stoneham, Sarah A. Lynde.<sup>3</sup>  
 Taunton, C. F. Boyden.  
 Waltham, Henry Whittemore.  
 Watertown, George R. Dwelley.  
 Westfield, G. H. Danforth.  
 Weymouth, I. M. Norcross.  
 Woburn, Thomas Emerson.  
 Worcester, Clarence F. Carroll.

## MICHIGAN.

Adrian, George W. Walker.  
 Alpena, L. S. Norton.  
 Ann Arbor, Walter S. Perry.  
 Au Sable, E. M. Hartman.  
 Battle Creek, F. W. Arbury.  
 Bay City, John A. Stewart.  
 Big Rapids, James R. Miller.  
 Cadillac, George R. Catton.  
 Cheboygan, William C. Thompson.  
 Coldwater, Egbert L. Briggs.  
 Detroit, W. E. Robinson.  
 Escanaba, S. Sterrett Beggs.  
 Flint, H. R. Hathaway.  
 Grand Haven, J. B. Estabrook.  
 Grand Rapids, W. W. Chalmers.  
 Ionia, C. L. Bemis.  
 Iron Mountain, E. F. Abernethy.  
 Ironwood, L. L. Wright.  
 Ishpeming, ———.  
 Jackson: District No. 1, Thomas L. Evans.  
           District No. 17, M. L. Palmer.

Kalamazoo, O. E. Latham.  
 Lansing, Charles O. Hoyt.  
 Ludington, H. T. Blodgett.  
 Manistee, Albert Jennings.  
 Marquette, Anna M. Chandler.  
 Menominee, O. J. Woodley.  
 Monroe, A. W. Tressler.  
 Mount Clemens, F. C. Price.  
 Muskegon, David MacKenzie.  
 Negaunee, F. D. Davis.  
 Niles, J. D. Schiller.  
 Owosso, J. W. Simmons.  
 Pontiac, F. E. Converse.  
 Port Huron, James H. Beazell.  
 Saginaw: East Side, A. S. Whitney.  
           West Side, Edwin C. Thompson.  
 Sault Ste. Marie, A. Jay Murray.  
 Traverse City, Charles T. Grawn.  
 West Bay City, ———.  
 Ypsilanti, M. A. Whitney.

<sup>1</sup> County school examiner. <sup>2</sup> Chairman of the school committee. <sup>3</sup> Secretary of the school committee.

## MINNESOTA.

Anoka, Zenas N. Vaughn.  
 Brainerd, B. T. Hathaway.  
 Duluth, Robert E. Denfield.  
 Faribault, George A. Franklin.  
 Mankato, George F. Kenaston.  
 Minneapolis, C. M. Jordan.

Red Wing, G. O. Brohough.  
 Rochester, F. D. Budlong.  
 St. Cloud, S. S. Parr.  
 St. Paul, Charles B. Gilbert.  
 Stillwater, M. A. Stone.  
 Winona, Buel T. Davis.

## MISSISSIPPI.

Columbus, J. M. Barrow.  
 Greenville, E. E. Bass.  
 Jackson, ——— ———.

Meridian, Andrew A. Kincannon.  
 Natchez, I. W. Henderson.  
 Vicksburg, Charles Pendleton Kemper.

## MISSOURI.

Boonville, F. W. Ploger.  
 Brookfield, E. L. Joyce.  
 Cape Girardeau, T. E. Joyce.  
 Carthage, J. M. White.  
 Chillicothe, W. F. Jamison.  
 Clinton, Charles B. Reynolds.  
 Columbia, James S. Stokes.  
 Fulton, John Patrick Goss.  
 Hannibal, R. B. D. Simonson.  
 Independence, William F. Bahlmann.  
 Jefferson City, J. U. White.  
 Joplin, ——— Brown.  
 Kansas City, James M. Greenwood.  
 Lexington, H. D. Demand.  
 Louisiana, A. P. Settle.

Marshall, R. H. Emberson.  
 Maryville, A. E. Clarendon.  
 Mexico, D. A. McMillan.  
 Moberly, J. T. Muir.  
 Nevada, W. J. Hawkins.  
 Rich Hill, J. P. Thurman.  
 St. Charles, George W. Jones.  
 St. Joseph, Edward B. Neely.  
 St. Louis, Edward H. Long.  
 Sedalia, George V. Buchanan.  
 Springfield, Jonathan Fairbanks.  
 Trenton, H. E. DuBois.  
 Warrensburg, F. E. Holiday.  
 Webb City, W. J. Stevens.

## MONTANA.

Butte City, J. P. Hendricks.

Helena, R. G. Young.

## NEBRASKA.

Beatrice, Carroll G. Pearse.  
 Fremont, Daniel Miller.  
 Grand Island, Robert J. Barr.  
 Hastings, Edwin N. Brown.  
 Kearney, Jesse T. Morey.

Lincoln, Frank Strong.  
 Nebraska City, W. H. Skinner.  
 Omaha, Albert P. Marble.  
 Plattsmouth, Frank C. McClellan.  
 South Omaha, A. A. Monroe.

## NEVADA.

Virginia City, C. E. Mack.

## NEW HAMPSHIRE.

Concord, Louis J. Rundlett.  
 Dover, Channing Folsom.  
 Keene, T. W. Harris.  
 Manchester, William E. Buck.

Nashua, James H. Fassett.  
 Portsmouth, J. Clifford Simpson.  
 Rochester, Henry Kimball.

## NEW JERSEY.

Atlantic City, William B. Loudenslager.  
 Bayonne, Charles M. Davis.  
 Bordentown, William Macfarland.<sup>1</sup>  
 Bridgeton, John S. Turner.  
 Burlington, Wilbur Watts.<sup>1</sup>  
 Camden, Martin V. Bergen.  
 Elizabeth, Warren R. Dix.  
 Gloucester City, J. C. Stinson.  
 Hackensack, C. D. Bogart.<sup>1</sup>  
 Harrison, John Dwyer.<sup>1</sup>  
 Hoboken, David E. Rue.  
 Jersey City, Henry Snyder.  
 Lambertville, Levi Brown.  
 Long Branch, C. Gregory.  
 Millville, E. C. Stokes.  
 Morristown, W. L. R. Haven.

New Brunswick, George G. Ryan.  
 Newark, William N. Barringer.  
 Orange, Usher W. Cutts.  
 Passaic, H. H. Hutton.  
 Paterson, J. A. Reinhart.  
 Perth Amboy, Adrian Lyon.  
 Phillipsburg, H. Budd Howell.  
 Plainfield, Henry M. Maxson.  
 Rahway, H. B. Rollinson.  
 Red Bank, Charles D. Warner.  
 Salem, Morris H. Stratton.  
 South Amboy, W. L. Heineken.<sup>1</sup>  
 Trenton, Leslie C. Pierson; B. C. Gregory.<sup>2</sup>  
 Town of Union (Hudson County), Otto  
 Ortel.<sup>3</sup>

## NEW MEXICO.

Santa Fe, U. T. Curran.

## NEW YORK.

Albany, Charles W. Cole.  
 Albion, Freeman A. Greene.  
 Amsterdam, District No. 8, J. W. Kimball.  
     District No. 11, John G. Ser-  
     viss.  
 Auburn, Benjamin B. Snow.  
 Batavia, John Kennedy.  
 Binghamton, Marcus W. Scott.  
 Brooklyn, William H. Maxwell.  
 Buffalo, Henry P. Emerson.  
 Canandaigua, Henry L. Taylor.  
 Catskill, Edwin S. Harris.  
 Cohoes, George E. Dixon.  
 College Point, Mary L. Lyles.  
 Corning, Leigh R. Hunt.  
 Cortland, C. V. Coon.  
 Dunkirk, John W. Babcock.  
 Edgewater, District No. 2, J. Hall Bur-  
     dick.<sup>4</sup>  
     District 1, J. W. Barris.<sup>5</sup>  
     District No. —, S. J. Pardee.<sup>6</sup>  
 Elmira, Elias J. Beardsley.  
 Flushing, John J. Chickering.  
 Fulton, B. G. Clapp.<sup>1</sup>  
 Geneva, William H. Truesdale.  
 Glens Falls, Sherman Williams.  
 Gloversville, James A. Estee.  
 Greenbush, H. R. Jolley.  
 Green Island, James Heatly.

Haverstraw, L. O. Markham.<sup>1</sup>  
 Hempstead, Wallace S. Newton.<sup>1</sup>  
 Hoosick Falls, Arthur G. Clement.  
 Hornellsville, William R. Prentice.  
 Hudson, William S. Hallenbeck.  
 Ilion, Judson I. Wood.  
 Ithaca, Luther C. Foster.  
 Jamaica, District No. 4, William J. Bal-  
     lard.  
     District No. 7, Cyrus E. Smith.<sup>7</sup>  
 Jamestown, Rovillus R. Rogers.  
 Johnstown, William S. Snyder.  
 Kingston, "Kingston School District,"  
     Charles M. Ryon.  
     District No. 2, — — —.  
     District No. 3, Henry Powers.<sup>1</sup>  
     District No. 4, Egbert Lewis.<sup>1</sup>  
 Lausingsburg, George F. Sawyer.  
 Little Falls, Thomas A. Caswell.  
 Lockport, Emmet Belknap.  
 Long Island City, John E. Shull.  
 Lyons, W. H. Kinney.  
 Malone, Sarah L. Perry.  
 Matteawan, G. R. Miller.<sup>1</sup>  
 Medina, Henry Pease.  
 Middletown, James F. Tuthill.  
 Mount Vernon, Charles E. Nichols.  
 New Brighton, Julia K. West.<sup>8</sup>  
 New Rochelle, Isaac E. Young.

<sup>1</sup> Principal.<sup>2</sup> Supervising principal.<sup>3</sup> Post-office, Weehawken.<sup>4</sup> Post-office, Stapleton.<sup>5</sup> Post-office, Thompkinsville.<sup>6</sup> Post office, Rosebark.<sup>7</sup> Post-office, Woodhaven.<sup>8</sup> School commissioner.



## NEW YORK—continued.

New York, John Jasper.	Poughkeepsie, Edward Burgess.
Newburg, R. V. K. Montfort.	Rochester, Milton Noyes.
Niagara Falls, N. L. Benham.	Rome, W. D. Manro.
North Tonawanda, Clinton S. Marsh.	Saratoga Springs, Thomas R. Kneil.
Norwich, Elbert W. Griffith.	Sangerties, Fred. N. Moulton.
Nyack, Ira H. Lawton.	Schenectady, S. B. Howe.
Ogdensburg, Barney Whitney.	Seneca Falls, F. S. Porter.
Olean, Fox Holden.	Sing Sing, J. Irving Gorton.
Oneida, Frank W. Jennings.	Syracuse, A. B. Blodgett.
Oneonta, Nathaniel N. Bull.	Tonawanda, F. J. Diamond.
Oswego, George E. Bullis.	Troy, Edwin E. Ashley.
Owego, Edwin P. Recordon.	Utica, George Griffith.
Peekskill, District No. 7 (Drum Hill Dis- trict), John Millar.	Waterford, Alexander Falconer.
District No. 8 (Oaksie Dis- trict), A. D. Dunbar.	Waterloo, Thomas C. Wilber. <sup>1</sup>
Penn Yan, F. T. Shultz.	Watertown, William G. Williams.
Plattsburg, James G. Riggs.	Waverly, P. M. Hull. <sup>1</sup>
Port Chester, John C. Rockwell.	Westchester, Michael E. Devlin.
Port Jervis, John M. Dolph.	West Troy, James R. Main. <sup>2</sup>
Port Richmond, Orry H. Hoag.	White Plains, Ralph A. Stewart.
	Whitehall, W. W. Howe.
	Yonkers, Charles E. Gorton.

## NORTH CAROLINA.

Asheville, J. D. Eggleston, jr.	Henderson, J. B. White. <sup>3</sup>
Charlotte, Alexander Graham.	Newbern, John S. Long.
Concord, J. F. Shinn.	Raleigh, Edward P. Moses.
Durham, C. W. Toms.	Salisbury, R. G. Kizer.
Fayetteville, B. C. McIver.	Wilmington, M. C. S. Noble.
Goldsboro, Logan D. Howell.	Winston, John J. Blair.

## NORTH DAKOTA.

Fargo, Darius Steward.	Grand Forks, William J. Pringle.
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## OHIO.

Akron, Elias Fraunfelter.	Delphos, E. W. Hastings.
Alliance, John E. Morris.	East Liverpool, S. D. Sanor.
Ashtabula, J. S. Lowe.	Elyria, Henry M. Parker.
Avondale, A. B. Johnson.	Findlay, J. W. Zeller.
Bellaire, Benjamin T. Jones.	Fostoria, H. L. Frank.
Bellefontaine, Henry Whitworth.	Fremont, W. W. Ross.
Brooklyn, Charles M. Knight.	Galion, A. W. Lewis.
Bucyrus, F. M. Hamilton.	Gallipolis, J. B. Mohler.
Cambridge, E. L. Abbey.	Greenville, F. Gillum Cromer.
Canton, James J. Burns.	Hamilton, C. C. Miller.
Chillicothe, ———.	Ironton, M. C. Smith.
Cincinnati, William H. Morgan.	Jackson, J. E. Kinnison.
Circleville, M. H. Lewis.	Kenton, E. P. Dean.
Cleveland, Lewis H. Jones.	Lancaster, Elijah Burgess.
Columbus, J. A. Shawan.	Lima, J. M. Greenslade.
Dayton, W. J. White.	Lorain, F. D. Ward.
Defiance, J. W. McInnis.	Mansfield, James W. Knott.
Delaware, D. E. Cowgill.	Marietta, W. W. Boyd.

<sup>1</sup>Principal.<sup>2</sup>School commissioner; post-office, Guilderland.<sup>3</sup>Chairman school committee.

## OHIO—continued.

Marion, Arthur Powell.  
 Martins Ferry, W. H. Stewart.  
 Massillon, E. A. Jones.  
 Middletown, B. B. Harlan.  
 Mount Vernon, Lewis D. Bonebrake.  
 Nelsonville, Fletcher S. Coultrap.  
 New Philadelphia, G. C. Maurer.  
 Newark, J. C. Hartzler.  
 Niles, F. J. Roller.  
 Norwalk, A. D. Beechy.  
 Oberlin, George W. Waite.  
 Painesville, George W. Ready.  
 Piqua, C. W. Bennett.  
 Pomeroy, Morris Bowers.  
 Portsmouth, Thomas Vickers.  
 Salem, M. E. Hard.  
 Sandusky, E. J. Shives.

Sidney, E. S. Cox.  
 Springfield, Carey Boggess.  
 Steubenville, Henry Ney Mertz.  
 Tiffin, J. H. Snyder.  
 Toledo, Harvey W. Compton.  
 Troy, C. L. Van Cleve.  
 Urbana, William McK. Vance.  
 Van Wert, W. T. Bushman.  
 Warren, R. S. Thomas.  
 Washington C. H., N. H. Chaney.  
 Wellston, Timothy S. Hogan.  
 Wellsville, J. L. MacDonald.  
 West Cleveland, J. M. Talbott.  
 Wooster, Charles Hauptert.  
 Xenia, Edwin B. Cox.  
 Youngstown, F. Treudley.  
 Zanesville, W. D. Lash.

## OKLAHOMA.

Oklahoma, E. L. Hallock.

## OREGON.

Astoria, ————  
 Portland, Irving W. Pratt.

Salem, E. H. Anderson.

## PENNSYLVANIA.

Allegheny, John Morrow.  
 Allentown, Francis D. Raub.  
 Altoona, D. S. Keith.  
 Archbald, R. N. Davis.  
 Ashland, William C. Estler.  
 Beaver Falls, J. M. Reed.  
 Bethlehem, Thomas Farquhar.  
 Bloomsburg, L. P. Sterner.  
 Braddock, John S. Keefer.  
 Bradford, E. E. Miller.  
 Bristol, Matilda S. Booz.  
 Butler, Ebenezer Mackay.  
 Carbondale, John J. Forbes.  
 Carlisle, C. P. Humrich.<sup>1</sup>  
 Chambersburg, William H. Hockenberry.  
 Chester, Charles F. Foster.  
 Columbia, S. H. Hoffman.  
 Connellsville, W. G. Gans.<sup>2</sup>  
 Conshohocken, J. Horace Landis.  
 Corry, A. D. Colegrove.  
 Danville, W. D. Steinbach.  
 Dubois, C. P. Garrison.  
 Dunmore, John E. Williams.  
 Easton, William W. Cottingham.  
 Erie, H. C. Missimer.  
 Franklin, N. P. Kinsley.  
 Greensburg, H. B. Twitmyer.

Harrisburg, Lemuel O. Foose.  
 Hazleton, David A. Harman.  
 Homestead, John C. Kendall.  
 Huntingdon, William M. Benson.  
 Johnstown, T. B. Johnston.  
 Lancaster, R. K. Buehrle.  
 Lansford, I. K. Witmer.  
 Lebanon, Cyrus Boger.  
 Lock Haven, John A. Robb.  
 McKeesport, H. F. Brooks.  
 Mahanoy City, Frank Seward Miller.  
 Mauch Chunk, James J. Bevan.  
 Meadville, Henry V. Hotchkiss.  
 Middletown, H. H. Weber.  
 Milton, Lewis A. Beardsley.  
 Monongahela City, E. W. Dalby.<sup>3</sup>  
 Mount Carmel, Samuel H. Dean.  
 Nanticoke, Clarence B. Miller.  
 New Brighton, J. Burdette Richey.  
 New Castle, William J. Shearer.  
 Norristown, Joseph K. Gotwals.  
 Oil City, C. A. Babcock.  
 Olyphant, M. W. Cumming.  
 Philadelphia, Edward Brooks.  
 Phoenixville, Harry L. Leister.  
 Pittsburg, George J. Luekey.  
 Pittston, Robert Shiel.<sup>3</sup>

<sup>1</sup> Secretary of school board.

<sup>2</sup> Principal.

<sup>3</sup> Supervising principal.

## PENNSYLVANIA—continued.

Plymouth (borough), Irving A. Heikes. <sup>1</sup>	Sunbury, C. D. Oberdorf.
Pottstown, William M. Rupert.	Tamaqua, Robert F. Ditchburn.
Pottsville, B. F. Patterson.	Tarentum, B. S. Hummel.
Reading, Samuel A. Baer.	Titusville, Robert D. Crawford.
Renovo, James J. Palmer.	Towanda, Minor Terry. <sup>5</sup>
Scranton, George W. Phillips.	Tyrone, C. E. Kauffman.
Shamokin, William F. Harpel.	Uniontown, Lee Smith. <sup>5</sup>
Sharon, J. W. Cannon.	Warren, W. L. MacGowan.
Sharpsburg, E. B. McRoberts.	Washington, A. G. Braden.
Shenandoah, Martin P. Whitaker.	West Chester, Addison Jones.
South Bethlehem, Owen R. Wilt.	Wilkes Barre, James M. Coughlin.
South Chester, <sup>2</sup> A. G. C. Smith. <sup>3</sup>	Wilkinsburg, J. D. Anderson.
South Easton, Samuel E. Shall. <sup>4</sup>	Williamsport, Samuel Transeau.
Steelton, L. E. McGinnis.	York, Atreus Wanner.

## RHODE ISLAND.

Bristol, J. P. Reynolds.	Pawtucket, Gilman C. Fisher.
East Providence, J. E. C. Farnham.	Providence, Horace S. Tarbell.
Johnston, Nathan M. Wright. <sup>6</sup>	Westerly, W. R. Whittle. <sup>5</sup>
Lincoln, Frank O. Draper. <sup>7</sup>	Woonsocket, F. E. McFee.
Newport, Benjamin Baker.	

## SOUTH CAROLINA.

Charleston, Henry P. Archer.	Greenville, E. L. Hughes.
Columbia, ——— ———.	Spartanburg, P. T. Brodie.

## SOUTH DAKOTA.

Sioux Falls, Alexander M. Rowe.

## TENNESSEE.

Chattanooga, A. T. Barrett.	Johnson City, R. H. Freeland.
Clarksville, J. W. Graham.	Knoxville, Albert Ruth.
Columbia, J. D. Meadors.	Memphis, George W. Gordon.
Jackson, Thomas H. Paine.	Nashville, Z. H. Brown.

## TEXAS.

Austin, John B. Winn.	Greenville, J. H. Van Amburgh.
Brenham, E. W. Tarrant.	Houston, W. S. Sutton.
Brownsville, J. F. Cummings.	Laredo, F. A. Parker.
Corpus Christi, Charles W. Crossley.	Marshall, Chesley F. Adams.
Corsicana, J. T. Hand.	Palestine, P. V. Pennybacker.
Dallas, J. L. Long.	Paris, J. G. Wooten.
Denison, William Gay.	San Antonio, J. E. Smith.
El Paso, W. H. Savage.	Sherman, W. Leonard Lemmon.
Fort Worth, Alexander Hogg.	Temple, J. E. Blair.
Gainesville, E. F. Comegys.	Tyler, John A. Boon.
Galveston, Oscar H. Cooper.	Waco, Charles T. Alexander.

## UTAH.

Logan, John T. Caine, jr.	Provo City, William S. Rawlings.
Ogden City, R. S. Page. <sup>1</sup>	Salt Lake City, J. F. Millspaugh.

<sup>1</sup> Supervising principal.

<sup>5</sup> Principal.

<sup>2</sup> Post-office, Chester.

<sup>6</sup> Post-office, Olneyville.

<sup>3</sup> County superintendent; post-office, Media.

<sup>7</sup> Post-office, Central Falls.

<sup>4</sup> Post-office, Easton.



## VERMONT.

Barre, Darwin S. Waterman.  
 Brattleboro, James H. Babbitt.  
 Burlington, Henry O. Wheeler.

Rutland, Alfred Turner.  
 St. Albans, Frank W. Whipple.

## VIRGINIA.

Alexandria, Kosciusko Kemper.  
 Charlottesville, F. W. Lane.  
 Danville, Abner Anderson.  
 Fredericksburg, E. M. Crutchfield.  
 Lynchburg, E. C. Glass.  
 Manchester, A. H. Fitzgerald.<sup>1</sup>  
 Newport News, J. H. Crafford.<sup>2</sup>

Norfolk, K. C. Murray.  
 Petersburg, D. M. Brown.  
 Portsmouth, —. Jacobs.  
 Richmond, William F. Fox.  
 Roanoke, B. Rust.  
 Staunton, John H. Bader.  
 Winchester, Maurice M. Lynch.

## WASHINGTON.

Fairhaven, C. W. Albright.  
 New Whatcom, Harry Pattison.  
 Olympia, W. H. Beeler.  
 Port Townsend, O. B. Grant.

Seattle, Frank J. Barnard.  
 Spokane Falls, D. Bemiss.  
 Tacoma, H. M. James.  
 Walla Walla, R. C. Kerr.

## WEST VIRGINIA.

Charleston, George S. Laidley.  
 Huntington, James M. Lee.  
 Martinsburg, J. A. Cox.

Parkersburg, W. M. Straus.  
 Wheeling, W. H. Anderson.

## WISCONSIN.

Antigo, John E. Martin.  
 Appleton, Carrie E. Morgan.  
 Ashland, Joseph M. Turner.  
 Baraboo, J. E. Necollins.  
 Beaver Dam, James J. Dick.  
 Beloit, C. W. Merriman.  
 Berlin, Perry Niskern.  
 Chippewa Falls, R. L. Barton.  
 Eau Claire, J. K. McGregor.  
 Fond du Lac, Ed. McLoughlin.  
 Fort Howard, A. W. Burton.  
 Green Bay, M. H. McMahon.  
 Janesville, D. D. Mayne.  
 Kaukauna, Hampton Corlett.  
 Kenosha, E. L. Grant.  
 La Crosse, Albert Hardy.  
 Madison, R. B. Dudgeon.  
 Manitowoc, H. Evans.

Marinette, J. T. Edwards.  
 Menasha, Joseph L. Fieweger.  
 Menominee, Judson E. Hoyt.  
 Merrill, James H. Heal.  
 Milwaukee, George W. Peckham.  
 Neenah, J. N. Stone.  
 Oconto, Elmer E. Carr.  
 Oshkosh, Rufus H. Halsey.  
 Portage, William Fulton.  
 Racine, O. C. Seelye.  
 Sheboygan, George Heller.  
 Stevens Point, Henry A. Simonds.  
 Superior, A. W. Rankin.  
 Watertown, C. F. Viebahn.  
 Waukesha, H. L. Terry.  
 Wausau, William R. Moss.  
 White Water, E. W. Walker.

## WYOMING.

Cheyenne, James O. Churchill.

Laramie, Frank W. Lee.

<sup>1</sup> Principal.

<sup>2</sup> County superintendent; post-office, Lee Hall.

## III.—COLLEGE PRESIDENTS.

## I.—Colleges for males and coeducational colleges of liberal arts.

Name of president.	University or college.	Address.
J. H. Patterson .....	Blount College .....	Blountsville, Ala.
Arthur W. McGaha, D. D. ....	Howard College .....	East Lake, Ala.
John O. Keener, D. D. ....	Southern University .....	Greensboro, Ala.
George R. McNeill, A. M. ....	Lafayette College .....	Lafayette, Ala.
Henry J. Willingham, A. B. ....	Lineville College .....	Lineville, Ala.
J. M. Bledsoe .....	Scottsboro College .....	Scottsboro, Ala.
C. S. Dinkins .....	Selma University .....	Selma, Ala.
James Loneragan, S. J. ....	Spring Hill College .....	Spring Hill, Ala.
R. C. Jones, LL. D. ....	University of Alabama .....	University, Ala.
Theo. B. Comstock, Sc. D. ....	University of Arizona .....	Tucson, Ariz.
G. C. Jones, A. M. ....	Arkadelphia Methodist College.	Arkadelphia, Ark.
John W. Conger, A. M. ....	Ouachita Baptist College ....	Do.
Eugene R. Long, Ph. D. ....	Arkansas College .....	Batesville, Ark.
Jas. A. Laughlin .....	Arkansas Cumberland College.	Clarksville, Ark.
A. C. Millar, A. M. ....	Hendrix College .....	Conway, Ark.
Joseph A. Booker, A. M. ....	Arkansas Baptist College .....	Little Rock, Ark.
William F. Shedd .....	Little Rock University .....	Do.
Thomas Mason, A. M., D. D. ....	Philander Smith College .....	Do.
Martin Kellogg, A. M., LL. D. ....	University of California .....	Berkeley, Cal.
Wm. Henslee, A. B. ....	Pierce Christian College .....	College City, Cal.
W. C. Sawyer, Ph. D., acting ..	University of the Pacific .....	College Park, Cal.
E. N. Condit .....	Occidental College .....	Los Angeles, Cal.
J. W. Hickey .....	St. Vincent's College .....	Do.
J. N. Beard, D. D. ....	Napa College .....	Napa, Cal.
S. B. Morse, D. D. ....	California College .....	Oakland, Cal.
Brother Bettelin .....	St. Mary's College .....	Do.
C. H. Keyes, A. B. ....	Throop Polytechnic Institute ..	Pasadena, Cal.
Edward Allen, S. J. ....	St. Ignatius College .....	San Francisco, Cal.
Joseph Riordan, S. J. ....	Santa Clara College .....	Santa Clara, Cal.
J. S. Austin, A. M. ....	Pacific Methodist College .....	Santa Rosa, Cal.
D. S. Jordan, Ph. D., LL. D. ....	Leland Stanford Junior University.	Stanford University, Cal.
J. P. Widney, A. M., M. D. ....	University of Southern California.	University, Cal.
W. J. Ham, A. M. ....	San Joaquin Valley College ..	Woodbridge, Cal.
Henry D. McAneney, A. M. ....	Hesperian College .....	Woodland, Cal.
James H. Baker, LL. D. ....	University of Colorado .....	Boulder, Colo.
Wm. F. Slocum, jr., LL. D. ....	Colorado College .....	Colorado Springs, Colo.
Horatio S. Beavis, A. M., Ph. B. ....	Presbyterian College of the Southwest.	Del Norte, Colo.
Wm. F. McDowell, Ph. D., S. T. B. ....	University of Denver .....	University Park, Colo.
Geo. W. Smith, D. D., LL. D. ....	Trinity College .....	Hartford, Conn.
B. P. Raymond, D. D., LL. D. ....	Wesleyan University .....	Middletown, Conn.
Timothy Dwight, D. D., LL. D. ....	Yale University .....	New Haven, Conn.
Albert N. Raub, Ph. D. ....	Delaware College .....	Newark, Del.
S. H. Greene, D. D., acting .....	Columbian University .....	Washington, D. C.
J. Havens Richards, S. J. ....	Georgetown University .....	Do.
J. E. Rankin, D. D., LL. D. ....	Howard University .....	Do.
E. M. Gallaudet, Ph. D., LL. D. ....	Gallaudet College .....	Do.
John F. Forbes, Ph. D. ....	John B. Stetson University ..	De Land, Fla.
W. F. Melton, A. M. ....	Florida Conference College ..	Leesburg, Fla.
A. F. Lewis, A. M. ....	Seminary West of the Suwannee River.	Tallahassee, Fla.
Charles G. Fairchild .....	Rollins College .....	Winter Park, Fla.
Wm. E. Boggs, D. D., LL. D. ....	University of Georgia .....	Athens, Ga.
Horace Bumstead, D. D. ....	Atlanta University .....	Atlanta, Ga.
C. O. Stubbs, A. M. ....	Bowdon College .....	Bowdon, Ga.

## I.—Colleges for males, etc.—Continued.

Name of president.	University or college.	Address.
J. B. Gambrell, D. D. ....	Mercer University.....	Macon, Ga.
W. A. Candler, D. D. ....	Emory College.....	Oxford, Ga.
D. C. John, D. D. ....	Clark University.....	South Atlanta, Ga.
W. F. Robinson.....	Young Harris College.....	Young Harris, Ga.
Franklin B. Gault, M. S. ....	University of Idaho.....	Moscow, Idaho.
J. G. Evans, D. D., LL. D. ....	Hedding College.....	Abingdon, Ill.
Wm. H. Wilder, A. M., D. D. ....	Illinois Wesleyan University.....	Bloomington, Ill.
M. J. Marsile, C. S. V. ....	St. Viateur's College.....	Bourbonnais, Ill.
Jas. E. Rogers, D. D., Ph. D. ....	Blackburn University.....	Carlinville, Ill.
Holmes Dysinger, D. D. ....	Carthage College.....	Carthage, Ill.
Andrew S. Draper, LL. D. ....	University of Illinois.....	Champaign, Ill.
Thomas S. Fitzgerald, S. J. ....	St. Ignatius College.....	Chicago, Ill.
Wm. R. Harper, Ph. D., D. D. ....	University of Chicago.....	Do.
W. E. Lugenbeel.....	Austin College.....	Effingham, Ill.
Daniel Irion.....	Evangelical Proseminary.....	Elmhurst, Ill.
Carl Johann, A. M., LL. D. ....	Eureka College.....	Eureka, Ill.
Henry W. Rogers, LL. D. ....	Northwestern University.....	Evanston, Ill.
J. A. Leavitt.....	Ewing College.....	Ewing, Ill.
J. H. Breese, Ph. D. ....	Northern Illinois College.....	Fulton, Ill.
J. H. Finley, A. M. ....	Knox College.....	Galesburg, Ill.
John V. N. Standish, Ph. D. ....	Lombard University.....	Do.
Wm. H. Monroe, A. M. ....	Greer College.....	Hoopeston, Ill.
John E. Bradley, Ph. D. ....	Illinois College.....	Jacksonville, Ill.
J. M. Coulter, Ph. D., LL. D. ....	Lake Forest University.....	Lake Forest, Ill.
M. H. Chamberlin, A. M., LL. B. ....	McKendree College.....	Lobanon, Ill.
A. E. Turner, A. M. ....	Lincoln University.....	Lincoln, Ill.
J. B. McMichael, D. D. ....	Monmouth College.....	Monmouth, Ill.
H. J. Kiekhoefer, A. M. ....	Northwestern College.....	Naperville, Ill.
B. W. Baker, A. M. ....	Chaddock College.....	Quincy, Ill.
Nicholas Leonard, O. S. F. ....	St. Francis Solanus College..	Do.
Olof Olsson, D. D., Ph. D. ....	Augustana College.....	Rock Island, Ill.
Hugoline Storff, O. S. F. ....	St. Joseph's Diocesan College.	Teutopolis, Ill.
Austen K. de Blois, Ph. D. ....	Shurtleff College.....	Upper Alton, Ill.
W. H. Klinefelter, D. D. ....	Westfield College.....	Westfield, Ill.
Chas. A. Blanchard.....	Wheaton College.....	Wheaton, Ill.
Joseph Swain, LL. D. ....	Indiana University.....	Bloomington, Ind.
Geo. S. Burroughs, Ph. D. ....	Wabash College.....	Crawfordsville, Ind.
Jos. Schmidt.....	Concordia College.....	Fort Wayne, Ind.
William T. Stott, D. D. ....	Franklin College.....	Franklin, Ind.
John P. D. John, D. D. ....	De Pauw University.....	Greencastle, Ind.
D. W. Fisher, D. D., LL. D. ....	Hanover College.....	Hanover, Ind.
W. H. Davis.....	Hartsville College.....	Hartsville, Ind.
Scot Butler, A. M. ....	Butler University.....	Irvington, Ind.
L. J. Aldrich, A. M., D. D. ....	Union Christian College.....	Merom, Ind.
John H. Martin, A. M., D. D. ....	Moore's Hill College.....	Moore's Hill, Ind.
Andrew Morrissey, C. S. C. ....	University of Notre Dame.....	Notre Dame, Ind.
Joseph J. Mills, A. M., LL. D. ....	Earlham College.....	Richmond, Ind.
Geo. Hindley, B. D. ....	Ridgeville College.....	Ridgeville, Ind.
Fintan Mundwiler, O. S. B. ....	St. Meinrad's College.....	St. Meinrad, Ind.
T. C. Reade, D. D. ....	Taylor University.....	Upland, Ind.
James Marshall, A. M., D. D. ....	Coe College.....	Cedar Rapids, Iowa.
J. Frederick Hirsch, A. M. ....	German English College.....	Charles City, Iowa.
P. W. Jenkins.....	Amity College.....	College Springs, Iowa.
Wm. S. Perry, D. D., LL. D. ....	Griswold College.....	Davenport, Iowa.
Laur. Larsen.....	Luther College.....	Decorah, Iowa.
H. L. Stetson, D. D. ....	Des Moines College.....	Des Moines, Iowa.
B. O. Aylesworth, LL. D. ....	Drake University.....	Do.
Ambrose C. Smith, D. D. ....	Parsons College.....	Fairfield, Iowa.
John W. Bissell, A. M., D. D. ....	Upper Iowa University.....	Fayette, Iowa.
George A. Gates, D. D. ....	Iowa College.....	Grinnell, Iowa.
Hugh Robinson, A. M. ....	Lenox College.....	Hopkinton, Iowa.
Fletcher Brown, A. M., B. D. ....	Simpson College.....	Indianola, Iowa.
Charles A. Schaeffer, Ph. D. ....	State University of Iowa.....	Iowa City, Iowa



*I.—Colleges for males, etc.—Continued.*

Name of president.	University or college.	Address.
Friedrich Munz, A. M. ....	German College .....	Mount Pleasant, Iowa.
C. L. Stafford, D. D. ....	Iowa Wesleyan University...	Do.
Wm. F. King, LL. D. ....	Cornell College .....	Mount Vernon, Iowa.
J. M. Atwater, A. M. ....	Oskaloosa College .....	Oskaloosa, Iowa.
A. Rosenberger, A. B., LL. B.	Penn College .....	Do.
John Stuart, B. D., Ph. D. ....	Central University of Iowa...	Pella, Iowa.
George W. Carr .....	University of the Northwest.	Sioux City, Iowa.
Wm. M. Brooks, A. M. ....	Buena Vista College .....	Storm Lake, Iowa.
L. Bookwalter .....	Tabor College .....	Tabor, Iowa.
George Grossman .....	Western College .....	Toledo, Iowa.
Jacob A. Clutz, D. D. ....	Wartburg College .....	Waverly, Iowa.
Innocent Wolf, O. S. B., D. D. ....	Midland College .....	Atchison, Kans.
L. H. Murlin, A. B., S. T. B. ....	St. Benedict's College .....	Do.
E. H. Vaughan, Ph. D. ....	Baker University .....	Baldwin, Kans.
J. D. Hewitt, D. D. ....	Soule College .....	Dodge City, Kans.
J. A. Weller, D. D. ....	College of Emporia .....	Emporia, Kans.
S. Ensminger, acting .....	Central College .....	Enterprise, Kans.
E. J. Hoenshel .....	Highland University .....	Highland, Kans.
F. H. Snow, Ph. D., LL. D. ....	Campbell University .....	Holton, Kans.
C. M. Brooke, A. M. ....	University of Kansas .....	Lawrence, Kans.
C. A. Swenson, A. M. ....	Lane University .....	Lecompton, Kans.
F. W. Colegrave, A. M. ....	Bethany College .....	Lindsborg, Kans.
Edward A. Higgins, S. J. ....	Ottawa University .....	Ottawa, Kans.
Edward W. Mueller, A. M. ....	St. Mary's College .....	St. Marys, Kans.
F. M. Spencer, D. D. ....	Kansas Wesleyan University.	Salina, Kans.
Peter McVicar, A. M., D. D. ....	Cooper Memorial College .....	Sterling, Kans.
A. S. Vaughan .....	Washburn College .....	Topeka, Kans.
Wm. N. Rice, A. M. ....	Wichita University .....	Wichita, Kans.
Daniel Stevenson, D. D. ....	Southwest Kansas College ..	Winfield, Kans.
Wm. G. Frost, Ph. D. ....	Union College .....	Barbourville, Ky.
Wm. A. Obenchain, A. M. ....	Berea College .....	Berea, Ky.
W. C. Young, D. D., LL. D. ....	Ogden College .....	Bowling Green, Ky.
W. S. Giltner, A. M. ....	Centre College .....	Danville, Ky.
A. C. Davidson, D. D. ....	Eminence College .....	Eminence, Ky.
J. W. Hardy .....	Georgetown College .....	Georgetown, Ky.
Milton Elliott .....	South Kentucky College .....	Topeka, Ky.
Charles L. Loos .....	Garrard College .....	Lancaster, Ky.
L. H. Blanton, D. D. ....	Kentucky University .....	Lexington, Ky.
W. S. Ryland, D. D. ....	Central University .....	Richmond, Ky.
John L. Steffan, D. D., Ph. D. ....	Bethel College .....	Russellville, Ky.
B. T. Spencer, A. M. ....	St. Marys College .....	St. Marys, Ky.
J. W. Nicholson, LL. D. ....	Kentucky Wesleyan College ..	Winchester, Ky.
James H. Blenk, S. M. ....	Louisiana State University ..	Baton Rouge, La.
C. W. Carter .....	Jefferson College .....	Convent, La.
C. W. Tomkies .....	Centenary College of Louisi- siana.	Jackson, La.
Henry L. Hubbell, D. D. ....	Keachie College .....	Keachie, La.
D. McKiniry, S. J. ....	Lake Charles College .....	Lake Charles, La.
E. C. Mitchell, D. D. ....	College of the Immaculate Conception.	New Orleans, La.
L. G. Adkinson, D. D. ....	Leland University .....	Do.
Oscar Atwood, A. M. ....	New Orleans University .....	Do.
Wm. P. Johnston, LL. D. ....	Straight University .....	Do.
William De Witt Hyde, D. D. ....	Tulane University .....	Do.
George C. Chase, A. M. ....	Bowdoin College .....	Brunswick, Me.
B. L. Whitman, A. M. ....	Bates College .....	Lewiston, Me.
Thomas Fell, Ph. D., LL. D. ....	Colby University .....	Waterville, Me.
D. C. Gilman, LL. D. ....	St. John's College .....	Annapolis, Md.
John A. Morgan, S. J. ....	Johns Hopkins University ..	Baltimore, Md.
Francis J. Wagner, D. D. ....	Loyola College .....	Do.
Charles W. Reid, Ph. D. ....	Morgan College .....	Do.
	Washington College .....	Chestertown, Md.

## I.—Colleges for males, etc.—Continued.

Name of president.	University or college.	Address.
Brother Maurice .....	Rock Hill College .....	Ellicott City, Md.
C. B. Rex, D. D. ....	St. Charles College .....	Do.
Edward P. Allen, D. D. ....	Mount St. Marys College ....	Mount St. Marys, Md.
William H. Purnell, LL. D. ....	New Windsor College .....	New Windsor, Md.
Thomas H. Lewis, A. M., D. D. ....	Western Maryland College....	Westminster, Md.
Merrill E. Gates, Ph. D., LL. D., L. H. D. ....	Amherst College .....	Amherst, Mass.
.....	Boston College .....	Boston, Mass.
William F. Warren, LL. D. ....	Boston University .....	Do.
Charles W. Eliot, LL. D. ....	Harvard University .....	Cambridge, Mass.
Samuel H. Lee .....	French Protestant College ....	Springfield, Mass.
Elmer H. Capen, D. D. ....	Tufts College .....	Tufts College, Mass.
F. Carter, Ph. D., LL. D. ....	Williams College .....	Williamstown, Mass.
G. Stanley Hall, Ph. D., LL. D. ....	Clark University .....	Worcester, Mass.
Edward A. McGurk, S. J. ....	College of the Holy Cross....	Do.
Denison C. Thomas, Ph. D. ....	Adrian College .....	Adrian, Mich.
L. R. Fiske, D. D., LL. D. ....	Albion College .....	Albion, Mich.
August F. Bruske, D. D. ....	Alma College .....	Alma, Mich.
James B. Angell, LL. D. ....	University of Michigan .....	Ann Arbor, Mich.
George W. Caviness, A. M. ....	Battle Creek College .....	Battle Creek, Mich.
M. A. Breed, A. B. ....	Benzonian College .....	Benzonian, Mich.
H. A. Schapman, S. J. ....	Detroit College .....	Detroit, Mich.
George F. Mosher, LL. D. ....	Hillsdale College .....	Hillsdale, Mich.
Gerrit J. Kollen, A. M. ....	Hope College .....	Holland, Mich.
A. G. Slocum, LL. D. ....	Kalamazoo College .....	Kalamazoo, Mich.
W. G. Sperry, D. D. ....	Olivet College .....	Olivet, Mich.
Bernard Locnikar, O. S. B. ....	St. John's University .....	Collegeville, Minn.
Lewis A. Pier, A. M. ....	Northwestern Christian College.	Excelsior, Minn.
George H. Bridgman, D. D. ....	Hamline University .....	Hamline, Minn.
Georg Sverdrup .....	Augsburg Seminary .....	Minneapolis, Minn.
Cyrus Northrop, LL. D. ....	University of Minnesota .....	Do.
James W. Strong, D. D. ....	Carleton College .....	Northfield, Minn.
Thorbjörn N. Mohn .....	St. Olaf College .....	Do.
Adam Ringland, D. D. ....	Macalester College .....	St. Paul, Minn.
Emil Uhl .....	St. Paul's College .....	St. Paul Park, Minn.
Matthias Wahlstrom, A. M. ....	Gustavus Adolphus College ..	St. Peter, Minn.
Gideon A. Burgess, A. M. ....	Parker College .....	Winnebago City, Minn.
R. A. Venable, D. D. ....	Mississippi College .....	Clinton, Miss.
C. A. Huddleston, A. M. ....	Cooper-Huddleston College ..	Daleville, Miss.
Charles E. Libbey, S. T. D. ....	Rust University .....	Holly Springs, Miss.
W. B. Murrah, D. D. ....	Millsaps College .....	Jackson, Miss.
Robert B. Fulton, A. M. ....	University of Mississippi ....	University, Miss.
E. J. Gantz .....	Central Christian College .....	Albany, Mo.
W. H. Pritchett, A. M. ....	Northwest Missouri College ..	Do.
R. E. L. Burks, A. M. ....	Southwest Baptist College ....	Bolivar, Mo.
R. E. Downing, B. Sur .....	Pike College .....	Bowling Green, Mo.
S. M. Dick, Ph. D. ....	Missouri Wesleyan College ....	Cameron, Mo.
B. H. Smith, LL. D. ....	Christian University .....	Canton, Mo.
J. J. Murray, C. M. ....	St. Vincent's College .....	Cape Girardeau, Mo.
Richard H. Jesse, LL. D. ....	University of the State of Missouri.	Columbia, Mo.
Geo. W. Mitchell .....	Grand River College .....	Edinburg, Mo.
J. D. Hammond, D. D. ....	Central College .....	Fayette, Mo.
Edward C. Gordon, D. D. ....	Westminster College .....	Fulton, Mo.
Chas. C. Hemenway .....	Pritchett School Institute ....	Glasgow, Mo.
J. H. Selden, A. M. ....	Ozark College .....	Greenfield, Mo.
Nannie S. Coleman .....	Western College .....	La Belle, Mo.
J. F. Cook, A. M., LL. D. ....	La Grange College .....	La Grange, Mo.
H. G. King .....	Lawson Presbyterian College ..	Lawson, Mo.
J. P. Greene, D. D., LL. D. ....	William Jewell College .....	Liberty, Mo.
Wm. H. Black, D. D. ....	Missouri Valley College .....	Marshall, Mo.

## I.—Colleges for males, etc.—Continued.

Name of president.	University or college.	Address.
J. B. Ellis.....	Morrisville College .....	Morrisville, Mo.
C. C. Woods, D. D.....	Scarritt Collegiate Institute .....	Neosho, Mo.
L. M. McAfee.....	Park College .....	Parkville, Mo.
James A. Lanias.....	St. Charles College .....	St. Charles, Mo.
Brother Paulian, F. S. C.....	College of the Christian Brothers.	St. Louis, Mo.
Joseph Grimmelsman, S. J.....	St. Louis University .....	Do.
Winfield S. Chaplin, LL. D.....	Washington University.....	Do.
Homer T. Fuller, Ph. D.....	Drury College .....	Springfield, Mo.
J. A. Thompson, A. M.....	Tarkio College .....	Tarkio, Mo.
F. A. Z. Kumlér, A. M.....	Avalon College .....	Trenton, Mo.
H. A. Koch, D. D.....	Central Wesleyan College.....	Warrenton, Mo.
G. F. Danforth, Ph. B.....	College of Montana.....	Deer Lodge, Mont.
David R. Kerr, Ph. D., D. D.....	University of Omaha .....	Bellevue, Nebr.
David R. Dungan, A. M.....	Cotner University .....	Bethany, Nebr.
David B. Perry, A. M.....	Doane College.....	Crete, Nebr.
A. J. Mercer, A. M.....	Fairfield College.....	Fairfield, Nebr.
James H. Canfield, LL. D.....	University of Nebraska.....	Lincoln, Nebr.
J. F. Ellis, D. D.....	Gates College.....	Neligh, Nebr.
James F. X. Hœffer, S. J.....	Creighton University.....	Omaha, Nebr.
Isaac Crook, D. D.....	Nebraska Wesleyan University.	University Place, Nebr.
J. George, A. M.....	York College .....	York, Nebr.
Stephen A. Jones, Ph. D.....	State University of Nevada.....	Reno, Nev.
W. J. Tucker, D. D., LL. D.....	Dartmouth College .....	Hanover, N. H.
Ernest Helmstetter.....	St. Benedict's College .....	Newark, N. J.
Austin Scott, Ph. D., LL. D.....	Rutgers College .....	New Brunswick, N. J.
F. L. Patton, D. D., LL. D.....	College of New Jersey.....	Princeton, N. J.
Wm. F. Marshall, A. M.....	Seton Hall College.....	South Orange, N. J.
F. H. Guicheteau, S. P. M.....	College of the Sacred Heart.....	Vineland, N. J.
E. S. Stover.....	University of New Mexico.....	Albuquerque, N. Mex.
Arthur E. Main, D. D.....	Alfred University.....	Alfred Center, N. Y.
Joseph F. Butler, O. S. F.....	St. Bonaventure's College.....	Allegany, N. Y.
R. B. Fairbairn, D. D., LL. D.....	St. Stephen's College.....	Annandale, N. Y.
D. H. Cochran, Ph. D., LL. D.....	Polytechnic Institute of Brooklyn.	Brooklyn, N. Y.
Brother Jerome, O. S. F.....	St. Francis College.....	Do.
J. A. Hartnett, C. M.....	St. John's College.....	Do.
John I. Zahm, S. J.....	Canisius College.....	Buffalo, N. Y.
Alpheus B. Hervey, Ph. D.....	St. Lawrence University.....	Canton, N. Y.
M. Woolsey Stryker, D. D.....	Hamilton College.....	Clinton, N. Y.
E. N. Potter, S. T. D., LL. D., D. C. L.	Hobart College.....	Geneva, N. Y.
N. L. Andrews.....	Colgate University.....	Hamilton, N. Y.
J. G. Schurman, Sc. D., LL. D.....	Cornell University.....	Ithaca, N. Y.
George H. Ball, D. D.....	Keuka College.....	Keuka College, N. Y.
Thomas E. Murphy, S. J.....	College of St. Francis Xavier.....	New York, N. Y.
Alexander S. Webb, LL. D.....	College of the City of New York.	Do.
Seth Low, LL. D.....	Columbia College.....	Do.
Brother Justin, A. M.....	Manhattan College.....	Do.
Thomas J. Garuon, S. J.....	St. John's College.....	Do.
H. M. MacCracken, D. D., LL. D.	University of the City of New York.	Do.
P. S. MacHale, C. M.....	Niagara University .....	Niagara University, N. Y.
David J. Hill, LL. D.....	University of Rochester.....	Rochester, N. Y.
A. V. V. Raymond, D. D.....	Union University.....	Schenectady, N. Y.
James R. Day, D. D.....	Syracuse University.....	Syracuse, N. Y.
George T. Winston, LL. D.....	University of North Carolina.....	Chapel Hill, N. C.
D. J. Sanders, D. D.....	Biddle University.....	Charlotte, N. C.
J. B. Shearer, D. D., LL. D.....	Davidson College.....	Davidson, N. C.
John C. Kilgo.....	Trinity College.....	Durham, N. C.



## I.—Colleges for males, etc.—Continued.

Name of president.	University or college.	Address.
L. Lyndon Hobbs, A. M .....	Guilford College .....	Guilford College, N. C.
Robert A. Yoder, A. M .....	Lenoir College .....	Hickory, N. C.
J. D. Shirey, A. M .....	North Carolina College .....	Mount Pleasant, N. C.
J. C. Clapp, D. D .....	Catawba College .....	Newton, N. C.
Chas. F. Meserve, A. M .....	Shaw University .....	Raleigh, N. C.
.....	Rutherford College .....	Rutherford College, N. C.
William H. Goler, D. D .....	Livingstone College .....	Salisbury, N. C.
C. E. Taylor, D. D., Litt. B. ....	Wake Forest College .....	Wake Forest, N. C.
M. A. Yost, A. M .....	Weaverville College .....	Weaverville, N. C.
Henry C. Simmons .....	Fargo College .....	Fargo, N. Dak.
Wm. H. Becker, LL. B .....	Rolla University .....	Rolla, N. Dak.
W. Merrifield, A. M .....	University of North Dakota .....	University, N. Dak.
M. V. B. Knox, D. D .....	Red River Valley University .....	Wahpeton, N. Dak.
Orello Cone, D. D .....	Buchtel College .....	Akron, Ohio.
Tamerlane P. Marsh, D. D .....	Mount Union College .....	Alliance, Ohio.
J. M. Tombaugh, A. M .....	Ashland University .....	Ashland, Ohio.
Chas. W. Super, Ph. D .....	Ohio University .....	Athens, Ohio.
Joseph E. Stubbs, D. D., LL. D. .	Baldwin University .....	Berea, Ohio.
C. Riemenschneider, Ph. D .....	German Wallace College .....	Do.
James Rogers, C. S. C .....	St. Joseph's College .....	Cincinnati, Ohio.
A. J. Burrows, S. J .....	St. Xavier College .....	Do.
W. O. Sproull, Ph. D., LL. D .....	University of Cincinnati .....	Do.
H. J. Ruetenik, D. D .....	Calvin College .....	Cleveland, Ohio.
Chas. F. Thwing, D. D .....	Western Reserve University .....	Do.
C. H. L. Schnette, A. M .....	Capital University .....	Columbus, Ohio.
Wm. H. Scott, LL. D .....	Ohio State University .....	Do.
A. Grabowski, Ph. D .....	Defiance College .....	Defiance, Ohio.
James W. Bashford, Ph. D .....	Ohio Wesleyan University .....	Delaware, Ohio.
Wm. N. Yates, acting .....	Findlay College .....	Findlay, Ohio.
Theodore Sterling, LL. D .....	Kenyon College .....	Gambier, Ohio.
Orvon G. Brown, A. M .....	Twin Valley College .....	Germantown, Ohio.
D. B. Parinton, A. M., LL. D .....	Denison University .....	Granville, Ohio.
Fenton Gall, B. S .....	Hillsboro College .....	Hillsboro, Ohio.
Ely V. Zollars, LL. D .....	Hiram College .....	Hiram, Ohio.
J. M. Jamieson, D. D .....	Hopedale Normal College .....	Hopedale, Ohio.
Carl Ackerman .....	Lima College .....	Lima, Ohio.
John W. Simpson, D. D., LL. D. .	Marietta College .....	Marietta, Ohio.
W. A. Williams, D. D .....	Franklin College .....	New Athens, Ohio.
Jesse Johnson .....	Muskingum College .....	New Concord, Ohio.
Wm. G. Ballantine, D. D., LL. D. .	Oberlin College .....	Oberlin, Ohio.
Wm. O. Thompson, D. D .....	Miami University .....	Oxford, Ohio.
Geo. W. MacMillan, Ph. D., D. D. .	Richmond College .....	Richmond, Ohio.
John M. Davis, Ph. D .....	Rio Grande College .....	Rio Grande, Ohio.
R. M. Freshwater, D. D., acting ..	Scio College .....	Scio, Ohio.
Samuel A. Ort, D. D .....	Wittenberg College .....	Springfield, Ohio.
John A. Peters, D. D .....	Heidelberg University .....	Tiffin, Ohio.
Thomas F. Moses, A. M., M. D .....	Urbana University .....	Urbana, Ohio.
Thomas J. Sanders, Ph. D .....	Otterbein University .....	Westerville, Ohio.
S. T. Mitchell, A. M., LL. D .....	Wilberforce University .....	Wilberforce, Ohio.
James B. Unthank, M. S .....	Wilmington College .....	Wilmington, Ohio.
S. F. Scovel, D. D .....	University of Wooster .....	Wooster, Ohio.
Daniel A. Long, D. D., LL. D .....	Antioch College .....	Yellow Springs, Ohio.
D. R. Boyd, A. M .....	University of Oklahoma .....	Norman, Okla.
Chas. H. Chapman, Ph. D .....	University of Oregon .....	Eugene, Oreg.
Thomas McClelland, D. D .....	Pacific University .....	Forest Grove, Oreg.
T. G. Brownson .....	McMinnville College .....	McMinnville, Oreg.
Thomas Newlin .....	Pacific College .....	Newberg, Oreg.
P. O. Bonebrake .....	Philomath College .....	Philomath, Oreg.
Willis C. Hawley, A. M .....	Willamette University .....	Salem, Oreg.
W. J. Holland, Ph. D., D. D .....	Western University of Penn- sylvania.	Allegheny, Pa.
Theodore L. Seip, D. D .....	Muhlenberg College .....	Allentown, Pa.

## I.—Colleges for males, etc.—Continued.

Name of president.	University or college.	Address.
E. B. Bierman, Ph. D . . . . .	Lebanon Valley College . . . . .	Annaville, Pa.
Leander Schnerr . . . . .	St. Vincent College . . . . .	Beatty, Pa.
W. P. Johnston, A. M . . . . .	Geneva College . . . . .	Beaver Falls, Pa.
Aug. Schultz, D. D . . . . .	Moravian College . . . . .	Bethlehem, Pa.
George E. Reed, D. D., LL. D . . . . .	Dickinson College . . . . .	Carlisle, Pa.
C. E. Hyatt, C. E . . . . .	Pennsylvania Military College.	Chester, Pa.
Henry T. Spangler, D. D . . . . .	Ursinus College . . . . .	Collegeville, Pa.
E. D. Warfield, LL. D . . . . .	Lafayette College . . . . .	Easton, Pa.
H. W. McKnight, D. D., LL. D . . . . .	Pennsylvania College . . . . .	Gettysburg, Pa.
Theo. B. Roth, D. D . . . . .	Thiel College . . . . .	Greenville, Pa.
Isaac C. Ketler, Ph. D . . . . .	Grove City College . . . . .	Grove City, Pa.
Isaac Sharpless, Sc. D., LL. D . . . . .	Haverford College . . . . .	Haverford College, Pa.
W. J. Goodwin . . . . .	Monongahela College . . . . .	Jefferson, Pa.
John S. Stahr, Ph. D., D. D . . . . .	Franklin and Marshall College.	Lancaster, Pa.
John H. Harris, Ph. D . . . . .	Bucknell University . . . . .	Lewisburg, Pa.
Isaac N. Rendall, D. D . . . . .	Lincoln University . . . . .	Lincoln University, Pa.
Brother Athanasius . . . . .	St. Francis College . . . . .	Loretto, Pa.
Wm. H. Crawford, D. D . . . . .	Allegheny College . . . . .	Meadville, Pa.
Aaron E. Gobble, A. M . . . . .	Central Pennsylvania College	New Berlin, Pa.
R. G. Ferguson, D. D . . . . .	Westminster College . . . . .	New Wilmington, Pa.
R. E. Thompson, D. D . . . . .	Central High School . . . . .	Philadelphia, Pa.
Brother Isidore . . . . .	La Salle College . . . . .	Do.
Charles C. Harrison, acting . . . . .	University of Pennsylvania . . . . .	Do.
J. M. Wisman, A. M . . . . .	Duquesne College . . . . .	Pittsburg, Pa.
John T. Murphy, C. S. Sp . . . . .	Holy Ghost College . . . . .	Do.
Charles De Garmo, Ph. D . . . . .	Swarthmore College . . . . .	Swarthmore, Pa.
C. A. McEvoy, O. S. A . . . . .	Villanova College . . . . .	Villanova, Pa.
James D. Moffat, D. D . . . . .	Washington and Jefferson College.	Washington, Pa.
E. B. Andrews, D. D., LL. D . . . . .	Brown University . . . . .	Providence, R. I.
H. E. Shepherd, A. M., LL. D . . . . .	College of Charleston . . . . .	Charleston, S. C.
John I. Cleland, A. M . . . . .	Presbyterian College of South Carolina.	Clinton, S. C.
John Q. Johnson, A. B., B. D . . . . .	Allen University . . . . .	Columbia, S. C.
Jas. Woodrow, Ph. D., LL. D . . . . .	South Carolina College . . . . .	Do.
W. M. Grier, D. D . . . . .	Erskine College . . . . .	Due West, S. C.
Charles Manly, D. D . . . . .	Furman University . . . . .	Greenville, S. C.
G. W. Holland, Ph. D., D. D . . . . .	Newberry College . . . . .	Newberry, S. C.
L. M. Dunton, D. D . . . . .	Claffin University . . . . .	Orangeburg, S. C.
James H. Carlisle, LL. D . . . . .	Wofford College . . . . .	Spartanburg, S. C.
Wm. M. Blackburn, D. D . . . . .	Pierre University . . . . .	East Pierre, S. Dak.
J. W. Hancher, M. S., A. M . . . . .	Black Hills College . . . . .	Hot Springs, S. Dak.
W. I. Graham, A. M . . . . .	Dakota University . . . . .	Mitchell, S. Dak.
I. P. Patch . . . . .	Redfield College . . . . .	Redfield, S. Dak.
Joseph W. Mauck, A. M . . . . .	University of South Dakota . . . . .	Vermillion, S. Dak.
Albert T. Free, A. M . . . . .	Yankton College . . . . .	Yankton, S. Dak.
J. Albert Wallace, D. D . . . . .	King College . . . . .	Bristol, Tenn.
Isaac W. Joyce, D. D., LL. D . . . . .	S. Grant University . . . . .	Chattanooga, Tenn.
George Summey, D. D . . . . .	Southwestern Presbyterian University.	Clarksville, Tenn.
J. F. Spence, S. T. D., LL. D . . . . .	American Temperance University.	Harriman, Tenn.
S. G. Gilbreath, B. S . . . . .	Hiwassee College . . . . .	Hiwassee College, Tenn.
G. M. Savage, A. M., LL. D . . . . .	Southwestern Baptist University.	Jackson, Tenn.
J. S. McCulloch, D. D . . . . .	Knoxville College . . . . .	Knoxville, Tenn.
Chas. W. Dabney, jr., Ph. D., LL. D . . . . .	University of Tennessee . . . . .	Do.



## I.—Colleges for males, etc.—Continued.

Name of president.	University or college.	Address.
N. Green, LL. D.	Cumberland University	Lebanon, Tenn.
T. W. Cannon, A. B.	Bethel College	McKenzie, Tenn.
S. W. Boardman, LL. D.	Maryville College	Maryville, Tenn.
Brother Maurelian.	Christian Brothers' College	Memphis, Tenn.
S. Hopwood, A. M.	Milligan College	Milligan, Tenn.
J. T. Henderson, A. M.	Carson and Newman College	Mossy Creek, Tenn.
J. Braden, D. D.	Central Tennessee College	Nashville, Tenn.
E. M. Cravath, D. D.	Fisk University	Do.
Alfred Owen, D. D.	Roger Williams University	Do.
James H. Kirkland, Ph. D.	Vanderbilt University	Do.
B. Lawton Wiggins, A. M.	University of the South	Sewanee, Tenn.
W. N. Billingsley, A. M.	Burritt College	Spencer, Tenn.
J. L. Bachman, A. M.	Sweetwater College	Sweetwater, Tenn.
Jere Moore, D. D.	Greeneville and Tusculum College.	Tusculum, Tenn.
James T. Cooter, A. B.	Washington College	Washington College, Tenn.
Thomas S. Miller	University of Texas	Austin, Tex.
G. Langner	Evangelical Lutheran College.	Brenham, Tex.
J. D. Robnett, D. D.	Howard Payne College	Brownwood, Tex.
Oscar L. Fisher, A. M., B. D.	Fort Worth University	Fort Worth, Tex.
John O'Shanahan, S. J.	St. Mary's University	Galveston, Tex.
John H. McLean, A. M., D. D.	Southwestern University	Georgetown, Tex.
I. B. Scott, D. D.	Wiley University	Marshall, Tex.
S. M. Luckett, D. D.	Austin College	Sherman, Tex.
B. D. Cockrill	Trinity University	Tehuacana, Tex.
Addison Clark, LL. D.	Add-Ran Christian University.	Thorp Spring, Tex.
R. C. Burleson, D. D., LL. D.	Baylor University	Waco, Tex.
H. T. Kealing, A. M.	Paul Quinn College	Do.
James E. Talmage, Sc. D., Ph. D.	University of Utah	Salt Lake City, Utah.
Matthew H. Buckham, D. D.	University of Vermont	Burlington, Vt.
Ezra Brainerd, LL. D.	Middlebury College	Middlebury, Vt.
Wm. W. Smith, LL. D.	Randolph-Macon College	Ashland, Va.
W. B. Yount	Bridgewater College	Bridgewater, Va.
Wm. M. Thornton, LL. D.	University of Virginia	Charlottesville, Va.
R. G. Waterhouse, D. D.	Emory and Henry College	Emory, Va.
Richard McIlwaine, D. D.	Hampden-Sidney College	Hampden-Sidney, Va.
G. W. C. Lee, LL. D.	Washington and Lee University.	Lexington, Va.
F. W. Boatwright, A. M.	Richmond College	Richmond, Va.
Julius D. Dreher, Ph. D.	Roanoke College	Salem, Va.
A. C. Jones	Vashon College	Burton, Wash.
F. N. English, A. M.	Colfax College	Colfax, Wash.
E. A. Sutherland	Walla Walla College	College Place, Wash.
B. W. Brintnall	Olympic University	Olympia, Wash.
J. W. Heston, Ph. D.	University of Seattle	Seattle, Wash.
Thos. M. Gatch, Ph. D.	University of Washington	Seattle, Wash.
Calvin W. Stewart, D. D.	Whitworth College	Sumner, Wash.
C. R. Thoburn	Puget Sound University	Tacoma, Wash.
Aegidius Junger, D. D.	St. James College	Vancouver, Wash.
James F. Eaton	Whitman College	Walla Walla, Wash.
Robert W. Douthat	Barboursville College	Barboursville, W. Va.
H. McDermid, A. M.	Bethany College	Bethany, W. Va.
Hayward Fleming, acting	West Virginia College	Flemington, W. Va.
P. B. Reynolds, acting	West Virginia University	Morgantown, W. Va.
Samuel Plantz, Ph. D., D. D.	Lawrence University	Appleton, Wis.
E. D. Eaton, D. D., LL. D.	Beloit College	Beloit, Wis.
H. A. Muehlmeier, D. D.	Mission House	Franklin, Wis.
F. P. Dalrymple, A. M.	Gale College	Galesville, Wis.
Chas. K. Adams, LL. D.	University of Wisconsin	Madison, Wis.



I.—*Colleges for males, etc.*—Continued.

Name of president.	University or college.	Address.
Wm. C. Whitford, D. D. ....	Milton College .....	Milton, Wis.
Leopold Bushart, S. J. ....	Marquette College .....	Milwaukee, Wis.
Rufus C. Flagg, D. D. ....	Ripon College .....	Ripon, Wis.
Joseph Rainier .....	Seminary of St. Francis of Sales.	St. Francis, Wis.
A. F. Ernst .....	Northwestern University ....	Watertown, Wis.
A. A. Johnson, D. D. ....	University of Wyoming .....	Laramie, Wyo.

II.—*Colleges for women.*

V. O. Hawkins .....	Athens Female College .....	Athens, Ala.
Henry A. Moody, M. D. ....	Bailey Springs University ...	Bailey Springs, Ala.
Solomon Palmer, Ph. D. ....	East Lake Athenæum .....	East Lake, Ala.
T. J. Simmons, A. M. ....	Union Female College .....	Eufaula, Ala.
Mrs. H. E. Stone .....	Synodical Female College .....	Florence, Ala.
A. B. Jones, D. D., LL. D. ....	Huntsville Female College .....	Huntsville, Ala.
S. W. Averett, LL. D. ....	Judson Female Institute .....	Marion, Ala.
Jas. D. Wade, A. M. ....	Marion Female Seminary .....	Do.
P. P. Winn, A. M. ....	Isbell College .....	Talladega, Ala.
E. H. Murfree .....	Central Female College .....	Tuskaloosa, Ala.
Alonzo Hill, A. M. ....	Tuskaloosa Female College .....	Do.
John Massey, LL. D. ....	Alabama Conference Female College.	Tuskegee, Ala.
Mrs. C. T. Mills .....	Mills College .....	Mills College, Cal.
Sister Mary Bernardine .....	College of Notre Dame .....	San Jose, Cal.
W. A. Finley, D. D. ....	Santa Rosa Seminary .....	Santa Rosa, Cal.
Miss M. Rutherford .....	Lucy Cobb Institute .....	Athens, Ga.
P. S. Twitty .....	Andrew Female College .....	Cuthbert, Ga.
G. J. Orr .....	Dalton Female College .....	Dalton, Ga.
Rev. James E. Powell .....	Monroe Female College .....	Forsyth, Ga.
A. W. Van Hoose .....	Georgia Female Seminary .....	Gainesville, Ga.
Rufus W. Smith, A. M. ....	LaGrange Female College .....	La Grange, Ga.
Chas. C. Cox, A. M. ....	Southern Female College .....	Do.
Wm. C. Bass .....	Wesleyan Female College .....	Macon, Ga.
J. Harris Chappell .....	Georgia Normal and Industrial College.	Milledgeville, Ga.
A. J. Battle, D. D., LL. D. ....	Shorter College .....	Rome, Ga.
John E. Baker .....	Young Female College .....	Thomasville, Ga.
Joseph R. Harker, Ph. D. ....	Illinois Female College .....	Jacksonville, Ill.
E. F. Bullard, A. M. ....	Jacksonville Female Academy.	Do.
C. W. Leffingwell, D. D. ....	St. Mary's School .....	Knoxville, Ill.
Sarah F. Anderson .....	Rockford College .....	Rockford, Ill.
John M. Duncan, A. M. ....	Coates College .....	Terre Haute, Ind.
J. F. Hendy, D. D. ....	College for Young Ladies .....	Oswego, Kans.
Annie J. Hooley .....	College of the Sisters of Bethany.	Topeka, Kans.
Benj. F. Cabell .....	Potter College .....	Bowling Green, Ky.
Edward K. Chandler, D. D. ....	Clinton College .....	Clinton, Ky.
Miss C. A. Campbell .....	Caldwell College .....	Danville, Ky.
J. M. Bruce .....	Liberty Female College .....	Glasgow, Ky.
E. W. Elrod .....	Lynland Female College .....	Glendale, Ky.
J. R. Baumes .....	Daughters College .....	Harrodsburg, Ky.
J. B. Skinner .....	Hamilton Female College .....	Lexington, Ky.
H. B. McClellan, A. M. ....	Sayre Female Institute .....	Do.
Cadesman Pope .....	Millersburg Female College .....	Millersburg, Ky.
Mrs. B. W. Vineyard .....	Jessamine Female Institute .....	Nicholasville, Ky.
A. C. Goodwin .....	Owensboro Female College .....	Owensboro, Ky.
G. B. Perry .....	Kentucky College for Young Ladies.	Pewee Valley, Ky.

## II.—Colleges for women—Continued.

Name of president.	University or college.	Address
A. G. Murphey .....	Logan Female College.....	Russellville, Ky.
John M. Hubbard, A. M. ....	Stanford Female College.....	Stanford, Ky.
S. W. Percy, A. M. ....	Winchester Female College..	Winchester, Ky.
George J. Ramsey, A. M. ....	Silliman Female Institute....	Clinton, La.
A. D. McVoy, A. M. ....	Mansfield Female College....	Mansfield, La.
S. Decatur Lucas .....	Jefferson Davis College.....	Minden, La.
H. S. Whitman .....	Westbrook Seminary .....	Deering, Me.
Edgar M. Smith .....	Maine Wesleyan Seminary and Female College.	Kents Hill, Me.
John F. Goucher, D. D. ....	Woman's College of Balti- more.	Baltimore, Md.
J. H. Apple, A. M. ....	Woman's College .....	Frederick, Md.
C. L. Keedy, A. M., M. D. ....	Kee Mar College .....	Hagerstown, Md.
J. H. Turner, A. M. ....	Lutherville Female Seminary	Lutherville, Md.
C. C. Bragdon, A. M. ....	Lasell Seminary for Young Women.	Auburndale, Mass.
Miss Agnes Irwin .....	Radcliffe College .....	Cambridge, Mass.
L. Clark Seelye, D. D. ....	Smith College .....	Northampton, Mass.
Mrs. E. S. Mead, A. M. ....	Hount Holyoke Seminary and College.	South Hadley, Mass.
Mrs. Julia J. Irvine .....	Wellesley College .....	Wellesley, Mass.
R. B. Abbott, D. D. ....	Albert Lea College .....	Albert Lea, Minn.
W. T. Lowrey, A. M., D. D. ....	Blue Mountain Female Col- lege.	Blue Mountain, Miss.
John W. Chambers .....	Whitworth Female College..	Brookhaven, Miss.
Mrs. Adelia M. Hillman .....	Hilman College .....	Clinton, Miss.
Robert Frazer, LL. D. ....	Industrial Institute and Col- lege.	Columbus, Miss.
B. R. Morrison .....	Corinth Female College.....	Corinth, Miss.
L. T. Fitzhugh .....	Belhaven College for Young Ladies.	Jackson, Miss.
T. B. Holloman .....	East Mississippi Female Col- lege.	Meridian, Miss.
L. M. Stone, D. D. ....	Stone College for Young Ladies.	Do.
A. S. Maddox .....	Union Female College .....	Oxford, Miss.
H. S. Roller .....	Chickasaw Female College..	Pontotoc, Miss.
W. H. Huntley .....	Port Gibson Female College..	Port Gibson, Miss.
Chas. H. Otken, LL. D. ....	Lea Female College .....	Summit, Miss.
H. Walter Featherstun, D. D..	Edward McGehee College....	Woodville, Miss.
Mrs. F. P. St. Clair .....	Christian Female College....	Columbia, Mo.
S. F. Taylor, D. D. ....	Stephens Female College .....	Do.
Hiram D. Groves .....	Howard Payne College .....	Fayette, Mo.
John W. Primrose, D. D. ....	Synodical Female College....	Fulton, Mo.
Lina Moxley .....	Presbyterian College .....	Independence, Mo.
B. T. Blewett, LL. D. ....	St. Louis Seminary .....	Jennings, Mo.
W. A. Wilson, A. M. ....	Baptist Female College .....	Lexington, Mo.
Archibald A. Jones .....	Central Female College.....	Do.
J. D. Blanton .....	Elizabeth Aull Female Semi- nary.	Do.
A. K. Yancey .....	Hardin College .....	Mexico, Mo.
W. S. Knight, D. D. ....	Lindenwood Female College..	St. Charles, Mo.
Jesse M. Durrell .....	New Hampshire Conference Seminary and Female Col- lege.	Tilton, N. H.
Gertrude G. Bowen .....	Bordentown Female College..	Bordentown, N. J.
J. H. McIlvaine, D. D. ....	Evelyn College .....	Princeton, N. J.
William E. Waters, Ph. D. ....	Wells College .....	Aurora, N. Y.
Truman J. Backus, LL. D. ....	Packer Collegiate Institute..	Brooklyn, N. Y.
Rufus S. Green, D. D. ....	Elmira College .....	Elmira, N. Y.
Miss James Smith, dean .....	Barnard College .....	New York, N. Y.
Geo. W. Samson, D. D., LL. D..	Rutgers Female College .....	Do.

## II.—Colleges for women—Continued.

Name of president.	University or college.	Address.
James M. Taylor, D. D.....	Vassar College .....	Poughkeepsie, N. Y.
James Atkins, D. D.....	Asheville Female College....	Asheville, N. C.
S. S. Rahn.....	Gaston College.....	Dallas, N. C.
F. L. Reid, D. D.....	Greensboro Female College...	Greensboro, N. C.
Joseph L. Murphy, A. M.....	Claremont Female College...	Hickory, N. C.
John D. Minick, A. M.....	Davenport Female College...	Lenoir, N. C.
Joseph A. Green.....	Louisburg Female College...	Louisburg, N. C.
John B. Brewer, A. M.....	Chowan Baptist Female Institute.	Murfreesboro, N. C.
F. P. Hobgood.....	Oxford Female Seminary.....	Oxford, N. C.
John H. Clewell.....	Salem Female Academy.....	Salem, N. C.
Silas E. Warren.....	Wilson Collegiate Institute...	Wilson, N. C.
G. K. Bartholomew, A. M., Ph. D.	Bartholomew English and Classical School.	Cincinnati, Ohio.
Chas. F. Thwing, D. D.....	Cleveland College for Women.	Cleveland, Ohio
L. D. Potter, D. D.....	Glendale Female College.....	Glendale, Ohio.
Clara Sheldon.....	Granville Female College....	Granville, Ohio.
D. B. Purinton, LL. D.....	Shepardson College.....	Do.
Faye Walker, D. D.....	Oxford College.....	Oxford, Ohio.
Miss Mary Evans.....	Lake Erie Seminary.....	Painesville, Ohio.
J. W. Knappenberger, A. M....	Allentown Female College....	Allentown, Pa.
J. Max Hark, D. D.....	Moravian Seminary for Young Ladies.	Bethlehem, Pa.
M. Carey Thomas, Ph. D.....	Bryn Mawr College.....	Bryn Mawr, Pa.
Mrs. Elizabeth Edgar, acting.	Wilson College.....	Chambersburg, Pa.
Charles B. Shultz.....	Linden Hall Seminary.....	Lititz, Pa.
E. E. Campbell, A. M.....	Irving Female College.....	Mechanicsburg, Pa.
Frances E. Bennett.....	Ogontz School.....	Ogontz School, Pa.
A. H. Norcross, D. D.....	Pittsburg Female College....	Pittsburg, Pa.
J. H. Rice.....	Columbia Female College....	Columbia, S. C.
W. R. Atkinson, D. D.....	Presbyterian College for Women.	Do.
Mrs. L. M. Bonner.....	Due West Female College....	Due West, S. C.
H. P. Griffith.....	Cooper-Limestone Institute...	Gaffney City, S. C.
A. S. Townes.....	Greenville College for Women.	Greenville, S. C.
M. M. Riley.....	Greenville Female College...	Do.
B. F. Wilson.....	Converse College.....	Spartanburg, S. C.
H. G. Reed.....	Walhalla Female College....	Walhalla, S. C.
S. Lander, A. M.....	Williamston Female College...	Williamston, S. C.
D. S. Hearon, D. D.....	Sullins College.....	Bristol, Tenn.
C. A. Folk, A. B.....	Brownsville Female College...	Brownsville, Tenn.
Kate McFarland.....	Union Female Seminary.....	Do.
Robert D. Smith, A. M.....	Columbia Athenæum.....	Columbia, Tenn.
S. A. Link, A. M.....	Tennessee Female College....	Franklin, Tenn.
A. M. Burney.....	Howard Female College.....	Gallatin, Tenn.
Howard W. Key, Ph. D.....	Memphis Conference Female Institute.	Jackson, Tenn.
Chas. C. Ross.....	East Tennessee Institute....	Knoxville, Tenn.
N. J. Finney, A. M.....	Cumberland Female College...	McMinnville, Tenn.
Miss V. O. Wardlaw, A. M....	Soule Female College.....	Murfreesboro, Tenn.
J. G. Paty.....	Boscobel College.....	Nashville, Tenn.
Geo. W. F. Price, D. D.....	Nashville College for Young Ladies.	Do.
J. D. Blanton.....	Ward Seminary.....	Do.
Alice S. Foxworthy, A. M....	Martin Female College.....	Pulaski, Tenn.
Wm. M. Graybill, A. M.....	Synodical Female College....	Rogersville, Tenn.
Moses E. Wood.....	Somerville Female Institute...	Somerville, Tenn.
Z. C. Graves, LL. D.....	Mary Sharp College.....	Winchester, Tenn.
Charles Carlton.....	Carlton College.....	Bonham, Tex.
P. H. Eager, A. M.....	Baylor Female College.....	Belton, Tex.
S. M. Godbey.....	Chappell Hill Female College.	Chappell Hill, Tenn.
R. O. Rounsavall.....	Waco Female College.....	Waco, Tex.



II.—*Colleges for women*—Continued.

Name of president.	University or college.	Address.
S. N. Barker.....	Martha Washington College.	Abingdon, Va.
Kate M. Hunt .....	Stonewall Jackson Institute.	Do.
Samuel D. Jones, B. L. ....	Southwest Virginia Institute.	Bristol, Va.
Wm. P. Dickinson.....	Albemarle Female Institute..	Charlottesville, Va.
Miss M. P. Horsley.....	Montgomery Female College.	Christiansburg, Va.
A. B. Warwick.....	Danville College for Young Ladies.	Danville, Va.
C. F. James, D. D. ....	Roanoke Female College.....	Do.
Chas. L. Cocke.....	Hollins Institute .....	Hollins, Va.
W. W. Smith, LL. D. ....	Randolph-Macon Woman's College.	Lynchburg, Va.
J. J. Scherer, A. M. ....	Marion Female College .....	Marion, Va.
J. A. I. Cassedy.....	Norfolk College for Young Ladies.	Norfolk, Va.
Arthur K. Davis, A. M. ....	Southern Female College ....	Petersburg, Va.
John H. Powell.....	Richmond Female Institute..	Richmond, Va.
James Willis, A. M. ....	Staunton Female Seminary...	Staunton, Va.
Mrs. J. E. B. Stuart .....	Virginia Female Institute...	Do.
W. W. Robertson .....	Wesleyan Female Institute..	Do.
John P. Hyde, D. D., LL. D. ....	Valley Female College.....	Winchester, Va.
Mrs. H. L. Field.....	Parkersburg Seminary.....	Parkersburg, W. Va.
Ella C. Sabin.....	Downer College .....	Fox Lake, Wis.
Louise R. Upton.....	Milwaukee College .....	Milwaukee, Wis.

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## PART II.

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### EDUCATION AND THE WORLD'S COLUMBIAN EXPOSITION.

- CHAP. I.—Programme of the International Congress of Education and Addresses of Welcome.
- II.—American Views and Comments on the Educational Exhibits.
- III.—German Criticism on American Education and the Educational Exhibits.
- IV.—Views of the French Commissioners.
- V.—Medical Education in the United States, as presented by French Specialists.
- VI.—Notes and Observations made by the Italian, Swedish, Danish, and Russian Delegates.
- VII.—Report on American Technological Schools.
- VIII.—Higher Education of Women in Russia.
- IX.—Papers Read at the World's Library Congress.
- X.—Report on Education at the Columbian Exposition, by Hon. John Eaton.
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## CHAPTER I.

### PROGRAMME OF THE INTERNATIONAL CONGRESS OF EDUCATION AND ADDRESSES OF WELCOME.

#### *I.—OFFICIAL PROGRAMME OF THE INTERNATIONAL CONGRESS OF EDUCATION OF THE WORLD'S COLUMBIAN EXPOSITION, JULY 25- 28, 1893.*

UNDER CHARGE OF THE NATIONAL EDUCATIONAL ASSOCIATION, UNITED STATES  
OF AMERICA.

#### COMMITTEE OF THE NATIONAL EDUCATIONAL ASSOCIATION.

##### IN GENERAL CHARGE.

WILLIAM T. HARRIS, Commissioner of Education,  
United States.

##### DEPARTMENTS.

##### Higher education:

Prof. NICHOLAS MURRAY BUTLER, Columbia  
College, New York City.

Prof. A. F. WEST, of Princeton University,  
secretary.

##### Secondary education:

Principal RAY GREENE HULING, New Bedford,  
Mass.

##### Elementary education:

Inspector JAMES L. HUGHES, Toronto, Ontario.

##### Kindergarten instruction:

Mrs. W. N. HAILMAN, Laporte, Ind.

##### School supervision:

Supt. W. H. MAXWELL, Brooklyn, N. Y.

##### Professional training of teachers:

Principal E. O. LYTE, Millersville, Pa.

##### Instruction in art:

President JAMES MACALISTER, Drexel Institute,  
Philadelphia.

##### Instruction in vocal music:

Director N. COE STEWART, Cleveland, Ohio.

##### Technological instruction:

Prof. HENRY MORTON, Stevens Institute, Hoboken,  
N. J.

##### Industrial and manual instruction:

Dr. ANDREW J. RICKOFF, New York City.

##### Business education:

President R. C. SPENCER, Milwaukee, Wis.

##### Physical education:

Prof. D. A. SARGENT, Harvard University,  
Cambridge, Mass.

##### Rational psychology in education:

President J. G. SCHURMAN, Cornell University,  
Ithaca, N. Y.

##### DEPARTMENTS—continued.

##### Experimental psychology in education:

Prof. GEORGE T. LADD, Yale University, New  
Haven, Conn.

##### Educational publications:

Mr. C. W. BARDEEN, Syracuse, N. Y.

##### CHAIRMEN PRESIDING AT THE SESSIONS.

Dr. JAMES B. ANGELL, president of Michigan  
University, presides at general sessions.

Dr. D. C. GILMAN, president Johns Hopkins University.

Rev. J. C. MACKENZIE, head master, Lawrenceville School, New Jersey.

Gen. JOHN EATON, ex-Commissioner of Education, United States.

Mrs. A. M. HUGHES, of Toronto, Ontario.

Hon. A. S. DRAPER, superintendent public schools, Cleveland, Ohio.

Dr. E. A. SHELDON, principal State normal school, Oswego, N. Y.

Prof. HALSEY C. IVES, director of art school, Washington University, St. Louis, Mo.

Prof. F. W. ROOT, of Chicago.

Gen. FRANCIS A. WALKER, president Institute of Technology, Boston, Mass.

Prof. J. D. RUNKLE, Institute of Technology, Boston, Mass.

Col. GEORGE SOULÉ, president of Soulé's Business College, New Orleans, La.

Prof. EDWARD M. HARTWELL, director of physical education in public schools, Boston, Mass.

Dr. JAMES MCCOSH, ex-president Princeton University.

Dr. G. STANLEY HALL, president Clark University, Worcester, Mass.

Dr. HENRY BARNARD, editor The American Journal of Education, Hartford, Conn.

## GENERAL CONGRESS.

TUESDAY, JULY 25, 3 P. M.

Meeting opened by prayer by Rev. F. A. Noble, D. D.

Address by C. C. Bonney, president of the World's Congress Auxiliary.

Addresses by Right Rev. Samuel Fellows, chairman of general committee on educational congresses; Mrs. Potter Palmer, president woman's branch of the auxiliary; Mrs. Charles Henrotin, vice-president; Mrs. H. M. Wilmarth, chairman of woman's branch committee on congress of education; Dr. S. H. Peabody, chief of department of liberal arts, and others.

Report of W. T. Harris, Commissioner of Education, chairman of the committee of arrangements.

Address by Hon. A. G. Lane, president of the National Educational Association, introducing Dr. James B. Angell, permanent chairman of the general congress.

## SECOND SESSION OF THE GENERAL CONGRESS, 8 P. M.

Address by Dr. James B. Angell, president of the general congress.

Address by Sir Henry Trueman Wood, secretary of the royal commission of Great Britain for the Chicago Exposition.

Address by M. Gabriel Compayré, president of the French commission on education.

Address by Prof. Dr. Stephan Waetzoldt, general commissioner in charge of the German imperial educational exhibit. Subject: The school reform in Germany.

Address by Prince Serge Wolkonsky, delegate of the ministry of public instruction.

Address by Dr. G. W. Ross, minister of education in Ontario.

Address by Dr. William R. Harper, president of the University of Chicago.

## THIRD SESSION OF THE GENERAL CONGRESS, FRIDAY, JULY 28, 8 P. M.

Address by Miss E. P. Hughes, principal of the Cambridge Training College for Teachers, Cambridge, England. Subject: The professional training of teachers for secondary schools.

Address by Right Rev. John J. Keane, rector of the Catholic University of America, Washington, D. C.

Address by Prof. L. Dimscha, of St. Petersburg University and delegate of the ministry of public instruction of Russia. Subject: Legal education in the United States.

Address by Prof. Dr. Ditmar Finckler, of the German imperial commission to the exhibition.

Address by M. Benjamin Buisson, delegate of the minister of education of France.

Address by Gen. John Eaton, ex-Commissioner of Education of the United States. Subject: Educational endowments in the United States.

Address by M. Ergraff Kovalevsky, delegate of the Russian ministry of public instruction.

Address by Dr. L. M. Törngren, director of Royal Central Gymnastic Institute, Stockholm, Sweden.

Address by Dr. Alberto Gomez Ruano, commissioner in charge of educational exhibit of Uruguay.

Address by Don J. Abelardo Nuñez, inspección general de instrucción primaria, Chili, director of the Chilian exhibit.

Address by Dr. Edwin Österberg. Subject: Training of teachers in high schools in Sweden.

## HIGHER EDUCATION.

FIRST SESSION, WEDNESDAY, JULY 26, 9.30 A. M.

*Subject: Universities.*

Chairman, President D. C. Gilman, of Johns Hopkins University. Alternate chairman, President W. R. Harper, of the University of Chicago. Secretary, President, Andrew F. West, of Princeton University.

## THEMES FOR DISCUSSION.

1. How far is it desirable that universities should be of one type? To be opened by President Martin Kellogg, of the University of California.

2. How should we cope with the problem of excessive specialization in university study? To be opened by a paper sent by Professor Allievo, of the University of Turin, Italy.

3. To what extent should an antecedent liberal education be required of students of law, medicine, and theology? To be opened by Prof. Woodrow Wilson, of Princeton University.

4. In what way may professional schools be most advantageously connected with universities and colleges? To be opened by President Seth Low, of Columbia College.

SECOND SESSION, THURSDAY, JULY 27, 9.30 A. M.

*Subject: Colleges.*

Chairman, President Timothy Dwight, of Yale University. Alternate chairman, President James B. Angell, of the University of Michigan. Opening address by the chair.

THEMES FOR DISCUSSION.

1. Should Greek be required for the degree of bachelor of arts? To be opened by Prof. W. G. Hale, of the University of Chicago.

2. What signs of improvement are visible in the undergraduate life of American students? The discussion to range over the topics of athletics, morals, student organizations, intercollegiate courtesies, and relations of the students to instructors. To be opened by President Raymond, of Wesleyan University.

THIRD SESSION, FRIDAY, JULY 28, 9.30 A. M.

*Subject: Topic dealing with the relations of higher education to the advancement of culture, learning, and civilization.*

Chairman, President Francis L. Patton, of Princeton University. Alternate chairman, President Seth Low, of Columbia College. Opening address by the chair.

THEMES FOR DISCUSSION.

1. The evolution of liberal education. To be opened by Prof. A. F. West, of Princeton University.

2. On what conditions should the degree of doctor of philosophy be given? To be opened (probably) by Prof. Ira Remsen, of Johns Hopkins University, followed by Prof. W. O. Sproull, dean of the University of Cincinnati.

3. The relation of our colleges and universities to the advancement of civilization. Closing addresses by Right Rev. Bishop Keane, rector of the Catholic University of America, Washington, D. C., and President James B. Angell, of the University of Michigan.

SECONDARY EDUCATION.

FIRST SESSION, WEDNESDAY, JULY 26, 9.30 A. M.

Inaugural address by Dr. J. C. Mackenzie, president of the department. The supervision of all secondary education in public high schools, private schools, and endowed academies by the State or municipal authority. Discussion.

11.30 A. M.

Thesis: The course of study in secondary schools, designed simply to prepare pupils for life (or designed as a finishing school), should it be different from that designed to prepare students for college or the professional school? By Dr. W. T. Reid, of Belmont, Cal. Discussion.

SECOND SESSION, THURSDAY, JULY 27, 9.30 A. M.

1. Thesis: (a) Should the amount of time given to mathematics in secondary schools (as they are) be diminished? (b) Should the amount of time given to languages in our secondary schools (as they are) be diminished, in order to make room for a more extended course in physics, botany, and chemistry? By Dr. C. F. P. Bancroft, principal Phillips Academy, Andover, Mass.; Dr. D. W. Abercrombie, of Worcester Academy, Mass., and Dr. Schlee, rector of the Real-Gymnasium of Altoona (and a member of the committee of seven appointed by the Emperor). Discussion.

11.30 A. M.

2. Thesis: Should art studies, including drawing, painting, and modeling, form a part of the prescribed course for all pupils in secondary schools? To be opened by a paper presented by Mlle. Marie Dugard, professor at the Lycée Molière, Paris, and member of the French commission, on the secondary education of girls in France. Discussion.



THIRD SESSION, FRIDAY, JULY 28, 9.30 A. M.

1. Thesis: Should algebra or geometry come first in the course of study of secondary schools? Hon. W. N. Hailman, superintendent of schools, Laporte, Ind., and Prof. Bela Krécsy, delegate from Hungary. Discussion.

11.30 A. M.

2. Thesis: In cases where a choice should be made, which should come first, Latin or some modern language, in the course of study of secondary schools? W. C. Collier, head master Roxbury Latin School, Boston, Mass. Discussion.

### ELEMENTARY EDUCATION.

FIRST SESSION, WEDNESDAY, JULY 6, 9.30 A. M.

*General topic: The course of study in elementary schools.*

Address by the president of the department, Gen. John Eaton, ex-Commissioner of Education of the United States.

1. Thesis: Should morals, language, numbers, geography, history of the country, writing, and drawing be considered the essentials of the course of study for the eight years of elementary instruction, the pupils being from 6 to 14 years of age? J. L. Pickard, LL. D., of Iowa, and Hon. L. H. Jones, superintendent public schools of Indianapolis. Discussion.

2. Thesis: What should be added to the essential branches of the elementary course of study to meet the industrial needs of localities or race characteristics? For example, should city schools introduce branches relating to commerce or manufactures, or should rural schools introduce agriculture, chemistry, and botany. Prof. Ergraphé Kovalevsky. Discussion.

3. Papers on the university education of women in England, prepared by Miss Fawcett and Miss Beale, of London. Read by abstract by Miss E. P. Hughes and Miss M. Louch, of London. Other papers prepared by foreign delegates for this department read by title or by abstract (and to be printed in full in the volume of proceedings).

SECOND SESSION, THURSDAY, JULY 27.

*General topic: The teaching of geography.*

Programme of this and the third session furnished by the National Geographic Society.

1. Opening address by Dr. Gardiner G. Hubbard, the president of the society. Relation of the currents of air and water to animal and vegetable life and to the temperature of countries.

2. Addresses from the delegates of foreign societies. (One hour.)

3. Address by Prof. William Libbey, jr., delegate from the American Geographical Society of New York. The relations of the Gulf Stream to the Labrador current off the New England coast.

4. Paper by Col. F. W. Parker, principal of the Cook County normal school. Relation of history to geography.

5. Address by Miss Eliza Ruhamah Seidmore. Japan.

6. Address by General Eaton, representing the Bureau of Education. The relations which may or should exist between the National Geographic Society and geographical instruction.

7. Announcement relative to awards of prizes by the National Geographic Society.

8. Address by Prof. George Davidson, representing the Geographical Society of the Pacific. An examination of the early voyages of discovery and explorations of the northwest coast of America between 1536 and 1603, including the identification of the anchorage of Sir Francis Drake on the coast of California, 1579.

9. Address by Prof. T. C. Chamberlin, representing the University of Chicago. The relations of geology to physiography in educational work.

10. Geographical instruction in the public schools. Prof. W. B. Powell, superintendent of public schools, Washington, D. C.

11. The arid regions of the United States. By F. H. Newell.

12. Address by Prof. Israel C. Russell, University of Michigan.

It is expected that the Hon. John Abercrombie will attend as delegate from the Royal Scottish Geographical Society, and Sir Casimer S. Gzowski, of Toronto, as a delegate from the Royal Geographical Society of London.

Through the courtesy of Mr. William E. Curtis, United States commissioner, the members of the conference will have the exclusive use of the Monastery of la

Rabida from 9 to 11 a. m., July 28. Mr. Curtis and Capt. John G. Bourke, United States Army, will explain "Exhibits of Columbus," and "the most precious collection of historical papers that were ever exhibited together."

THIRD SESSION, THURSDAY, JULY 27, 8 P. M.

Address: International Polar Expeditions. By Gen. A. W. Greely, United States Army.

FOURTH SESSION, FRIDAY, JULY 28, 9.30 A. M.

*General topic: Morals, religion, and citizenship.*

1. Thesis: How far should moral education be made to include courtesy and social etiquette? What school exercises are the best to promote education for citizenship? In what ways can the studies of the common school, such as history and literature, be made to develop the sentiment of patriotism? What special work should be undertaken in the elementary school to prepare the pupils for the duties of citizenship? Hon. W. A. Mowry, superintendent schools, Salem, Mass., and Hon. D. B. Johnson, superintendent schools, Columbia, S. C. Discussion.

2. Dr. N. G. W. Lagerstedt, delegate from Sweden, will read a paper on the "Public educational system of Sweden."

3. Thesis: Is it possible to separate religious and moral instruction? Should religious instruction be introduced into the public or common schools, and taught either by the regular teacher or by clergymen? Should the Bible be read as a religious exercise? In how far can the discipline of the school be relied upon to secure moral habits? E. E. White, LL. D., of Columbus, Ohio. Discussion.

## KINDERGARTEN INSTRUCTION.

FIRST SESSION, WEDNESDAY, JULY 26, 9.30 A. M.

Introductory address, Mrs. A. M. Hughes, president of the department.

*General topic of the first session: The essential characteristics of the kindergarten as distinguished from the primary school, and the practical adjustment of the former to the latter.*

1. Thesis: (1) The essential characteristics of a kindergarten. (2) Its gifts and occupations. (3) Should the kindergarten attempt to teach reading or writing? (4) Should the plays and games, which Froebel invented, be modified? Should substitutions be made for any of them, or others be added? (5) What is the place and value of the song in the kindergarten, and the degree of dramatic element which should accompany the song? The above discussions opened by Mrs. Alice H. Putnam of Chicago, Mrs. Sarah A. Stewart of Philadelphia, and Miss Constance Mackenzie, also of Philadelphia, and Mrs. Ottilie Bondy of Jena, Germany.

2. Thesis: (1) The organic union of kindergarten and primary school. (2) What modifications in the primary school are necessary or desirable in order to adapt it to continue the work of the kindergarten and reap the advantages of the training already received? (3) What are the essential differences in discipline and instruction that should characterize the primary school and distinguish it from the kindergarten? The above discussions to be opened by Mrs. Sarah B. Cooper of California, Hon. W. E. Sheldon of Massachusetts, Mr. B. Pickman Mann of Washington, D. C., and Miss Mary C. McCulloch of St. Louis.

SECOND SESSION, THURSDAY, JULY 27, 9.30 A. M.

1. Thesis: (1) Preparation of the kindergartner for her work. (2) Should all kindergarten teachers be required to pass examination in secondary studies, such as algebra, geometry, modern or ancient languages, general history, natural science, psychology, and English literature or the literature of the native country? (3) What training in Froebel's philosophy should be prescribed in a professional course of training for the kindergartner? (4) What work in the gifts and occupations, the plays and games, theoretically and practically, should be required for the graduate from a kindergarten training school? The above discussions opened by papers from Miss Susan E. Blow, by Miss Annie Laws, president of the Kindergarten Society of Cincinnati, and by Mrs. Louisa Parsons Hopkins, of the board of school supervisors, Boston.

2. Thesis: (1) Educative value of hand work in the kindergarten. (2) Cautions to be observed as to the limits of certain of the occupations, such, for example, as pricking paper, and other work that is liable to strain the eyes if too long contin-



ned. (3) The Froebel system of drawing, in contrast to free-hand drawing. (4) The characteristic mental and physical conditions of the first seven years of childhood, which determine the special educative value of hand work in the kindergarten. The above discussions opened by Hon. W. N. Hailman, superintendent of schools, Laporte, Ind., and Miss L. H. Pingree of Boston.

### THIRD SESSION, FRIDAY, JULY 28, 9.30 A. M.

1. Thesis: (1) To what extent is the use of symbolism justifiable in the kindergarten? (2) Is there any validity to the claim often urged, that the child under 7 years of age is to be distinguished in psychological development from the child of more than 7 years of age, through his greater dependence upon symbolic modes of instruction? (3) Is the distinction a valid one between symbolic and conventional studies—conventional studies being understood to mean reading, writing, written arithmetic, and appliances useful in intercommunication but not emblematic or symbolic of a second and higher meaning? The above discussions opened by Prof. Earl Barnes of Leland Stanford Junior University, and Prof. Charles A. McMurphy of Illinois State Normal University, Miss Elizabeth Harrison of Chicago Mrs. Marion Foster Washburne of Chicago, Miss Hattie Neil of Chicago, and Mrs. Eudora L. Hailman of Laporte, Ind.

2. Thesis: What should be the character of the stories told in the kindergarten, and to what extent should stories be told? The above discussions opened by Miss Mary T. Hotchkiss of Milwaukee.

### SCHOOL SUPERVISION.

#### FIRST SESSION, WEDNESDAY, JULY 26, 9.30 A. M.

Address by Hon. A. S. Draper, superintendent public schools, Cleveland, Ohio, president of the department.

1. Thesis: Teacher's examinations, certificates, and licenses. What scholastic knowledge should be required from teachers before being permitted to enter on a term of probationary service: In English? In languages other than English? In natural science? In physics and chemistry? In mathematics? In art? Hon. W. B. Powell, superintendent public schools, Washington, D. C. Discussion.

2. Thesis: How to improve the work of poor teachers. Hon. F. A. Fitzpatrick, superintendent public schools, Omaha, Nebr. Discussion.

3. Thesis: How to interest a corps of teachers in the study of psychology and its application to the work of the schoolroom. Discussion.

4. Thesis: University participation for teachers. Hon. E. P. Seaver, superintendent schools, Boston, Mass. Discussion.

#### SECOND SESSION, THURSDAY, JULY 27, 9.30 A. M.

1. Thesis: Appointment and tenure of office of superintendents. President F. W. Parker, Cook County normal school, Chicago, and Dr. B. A. Hinsdale, of Michigan University. Discussion.

2. Thesis: Who shall appoint teachers, and on whose nomination? Hon. H. S. Tarbell, superintendent public schools, Providence, R. I., and Hon. C. B. Gilbert, superintendent public schools, St. Paul, Minn. Discussion.

#### THIRD SESSION, FRIDAY, JULY 28, 9.30 A. M.

1. Thesis: At what point in the course of study should departmental or special teachers be employed in elementary schools?

2. Thesis: Should the law require the attendance of all pupils in school between the ages of 8 and 14? Hon. John Jasper, superintendent of schools, New York City; Hon. Thos. B. Stockwell, State superintendent of public instruction, Rhode Island, and Hon. A. G. Lane, superintendent public schools, Chicago, Ill. Discussion.

### PROFESSIONAL TRAINING OF TEACHERS.

#### FIRST SESSION, WEDNESDAY, JULY 26, 9.30 A. M.

*General topic of discussion for the season: Schools of practice, or "model" schools, connected with the schools for the professional training of teachers.*

Introductory address by Dr. E. A. Sheldon, president of the department.

Paper by Fannie S. Guptill, Minneapolis, Minn. Discussion of the questions involved.

1. The kind and degree of preparation required before coming to the school of practice.



2. The time in the course of preparation when the practice should be taken.
3. The value and extent of observation work in the model school.
4. Amount and character of criticism to be recommended.
5. Value of "substituting," or filling vacancies in ward schools.
6. Value of practicing with classmates as pupils.
7. Shall the instructors of branches be the critics in their own branches?
8. Shall the critic be always present?
9. How much practice shall be required each day, and how long continued?
10. How often should the classes taught be changed?
11. What degree of perfection in teaching shall be required in order to entitle the candidate to a diploma?
12. Is the plan a good one to have a paid teacher in charge of each class in the school of practice who does a part of the teaching and at the same time criticises the work of the pupil teachers?
13. The value of sending pupils out into neighboring schools to observe and take charge occasionally of classes.

The discussion will be opened by Francis W. Parker, principal Cook County normal school, Chicago, Ill., and J. W. Cook, principal State Normal University, and others. The discussion will be followed by the reading of two valuable and highly interesting papers. The first paper is prepared by Signor Giacomo Oddo Bonafede, director of normal school, Avellino, Italy. Subject of the paper: "What professional training of teachers is desirable (in normals or by practical instruction)?" To be read by Mrs. C. L. Place, principal of training school, St. Paul, Minn. The second paper is prepared by Joseph W. Cowham, lecturer on education and master of methods, Westminster Wesleyan Training College, S. W. England. This paper will be read by Miss N. Cropsy, assistant superintendent of schools, Indianapolis, Ind.

#### SECOND SESSION, THURSDAY, JULY 27, 9.30 A. M.

1. Should we have a gradation of normal and training schools?
  - (a) For training teachers of normal schools, colleges, and universities.
  - (b) For training teachers for secondary schools.
  - (c) For training teachers for elementary schools.
  - (d) For training teachers for kindergarten and primary schools.
  - (e) For training teachers for rural schools.
  - (f) Requirements of these different grades:
    - (1) As to scholastic instruction.
    - (2) As to psychological and technical instruction.
    - (3) As to practice teaching under criticism.

Thomas Kirkland, principal of the normal school at Toronto, Canada, will open this discussion with a paper, and will be followed by Eugène Martin, directeur de l'école primaire supérieure, Paris, Dr. Francis J. Cheney, principal State normal school, Cortland, N. Y., and others.

2. Should the course of study in normal schools be wholly professional, or should it include work in the elementary and secondary branches, even where proficiency in these branches is required as a condition for admission? If so, to what extent? The discussion will be opened with a short paper by Daniel Fulcomer, A. M., president Western Michigan College, Grand Rapids, Mich., to be followed by F. B. Palmer, principal of normal school, Fredonia, N. Y., and others.

3. How does the typical normal-school work differ in method from that of secondary or higher education? Malcolm MacVicar, superintendent of the Freedmen's schools of the Baptists' Home Mission Society, Brooklyn, N. Y., will open the discussion with a paper, to be followed by John W. Dickinson, secretary Massachusetts Board of Education, and others.

#### THIRD SESSION, FRIDAY, JULY 28, 9.30 A. M.

What should be required of a candidate for the degree of doctor of pedagogy? Discussion, led by Jerome Allen, Ph. D., dean of faculty of pedagogy, University of the City of New York, and Dr. Edward R. Shaw, of same institution.

(a) Should such requirements be confined to scholastic instruction? Dr. Charles McMurry, of Illinois State Normal University. What should be required in the way of teaching, ability, experience, and skill? Dr. S. G. Williams, of Cornell University.

(b) Should original investigation be required in some branch of child study? Earl Barnes, professor of pedagogy in Leland Stanford Junior University, California.

(c) Or in some phase of the history of education? Dr. Edward Brooks, superintendent of schools, Philadelphia, Pa.

(d) Or in experimental psychology with a view to determine some questions in regard to the educational value of a branch, or branches, in the curriculum of elementary or secondary schools? Prof. Edgar D. Shimer, of faculty of pedagogy, University of the City of New York.

11.30 A. M.

What value should be attached to the formal study of children in the training of teachers? Dr. G. Stanley Hall, president of Clark University, Worcester, Mass., will open the discussion, to be followed by Miss Margaret K. Smith, State normal and training school, Oswego, N. Y.

The following persons from abroad have announced their intention of coming to the departmental international congress for the professional training of teachers. They will doubtless take a part in the discussions of this department, making the occasion one of unusual interest and profit:

*England*.—Miss E. P. Hughes, principal Cambridge Training College for Higher Teachers, Cambridge.

*France*.—Messieurs Gabriel Compayré, president of the French commission; Benjamin Buisson, delegate of the French ministry of public instruction; Eugène Martin, directeur de l'école primaire supérieure of Paris, and member of the French commission.

*Ireland*.—Prof. D. Croly, M. A., St. Patrick's Training College, Drumecondra, Dublin; Prof. J. J. Doherty, LL. D., training college, Marlborough street, Dublin.

*Scotland*.—J. R. Leslie, M. A., principal Episcopal Training College, Dalry House, Edinburgh; A. S. Baird, esq., Free Church Training College, Glasgow; Dr. Thomas Morrison, Glasgow Free Training College, Glasgow.

*Canada*.—John B. Calkin, normal school, Truro, Nova Scotia; Eldon Mullin, principal provincial normal school, Fredericton, New Brunswick; Thomas Kirkland, principal Toronto normal school, Toronto, Ontario; Th. G. Rouleau, principal normal school, Laval, Quebec; Prof. J. A. Calder, principal normal school, Moose Jaw, Northwest Territories.

## ART INSTRUCTION.

FIRST SESSION, WEDNESDAY, JULY 26, 9.30 A. M.

*General topic: Methods of teaching drawing.*

Address by Prof. Halsey C. Ives, president of the department. Discussion.

1. Thesis: Whether the pupil shall first take a course of drawing from the flat, in order to learn the technique of representation. Prof. H. T. Bailey, supervisor of drawing for the State of Massachusetts. Discussion.

2. Thesis: How early shall the pupil begin to use models? Prof. W. S. Perry, Pratt Institute, Brooklyn, N. Y. Discussion.

3. Thesis: Should the models to be drawn be artistically beautiful, or shall the pupil practice drawing real objects without reference to the æsthetic question? Prof. L. W. Miller, principal of the Philadelphia School of Arts, and Prof. W. S. Goodenough. Discussion.

SECOND SESSION, THURSDAY, JULY 27, 9.30 A. M.

*General topic: All art study should aim first to familiarize the pupil with the chief types of the great works of art with a view to cultivating the artistic taste.*

Miss Emily J. Rice, of Cook County Normal School.

1. Thesis: The pupil should study and analyze a series of works from the great masters, describing in language in the form of essays the general theme and the methods adopted of making the work of art tell its own story, the technical difficulties and successful devices of the artist in completing his work of art. Prof. J. M. Hoppin, Prof. Alfred Emerson, Cornell University, and Rev. Frank Gunsaulus, president of Armour Institute, Chicago. Discussion.

2. Thesis: The pupil should copy or make a drawing of the work of art which he has learned to analyze, and his exercise should be criticised by fellow pupils and teacher, making clear the respects wherein he has failed to seize the motives of the artist, or to reproduce his (the artist's) devices of representation. Mrs. Mary Dana Hicks, of Boston. Discussion.

3. Thesis: Work of sculpture after being studied analytically and reproduced in drawings should be modeled in clay, and works of painting after such preliminaries should be copied in painting by the pupil. Prof. George L. Schreiber, of Armour Institute; Mr. E. F. Fenollosa, of the Boston Art Museum. Discussion.

THIRD SESSION, FRIDAY, JULY 28.

1. Thesis: Connected with the learning to model in clay, wax, or other material, the pupil should have a series of lessons on the limitations belonging to the arts of painting and sculpture, and discuss what subjects can properly be treated in sculp-



ture, and what more properly belong to painting. Prof. W. M. R. French, director of the Art Institute of Chicago, Prof. J. F. Weir, of Yale University, and Miss Emily Sartain, of Philadelphia. Discussion.

2. Thesis: Should drawing commence from the beginning with light and shade, or should it be outline drawing for the first year or more? Miss Josephine C. Locke, of Chicago, Miss Hannah J. Carter, of Drexel Institute, Philadelphia, and Prof. J. Ward Stimson, of the New York School of Fine Arts. Discussion.

### INSTRUCTION IN VOCAL MUSIC.

WEDNESDAY, JULY 26, 9.30 A. M.

*General topic: The course of study, or what the pupil should learn of vocal music in the elementary schools for children aged 5 to 15 years.*

Address by Prof. F. W. Root, president of the department.

1. In what grades of the elementary school should the children learn pieces of music by rote (or by ear only), and in what grades should they commence to learn to read musical notation? Discussion.

2. In what grades or at what ages should pupils be required to take up part singing or learn other parts besides the soprano or melody? Discussion.

3. What music is especially adapted to children from 5 to 10, and what from 10 to 15 years? What rule should guide the selection from popular songs? from classic composers? A discussion of the characteristics of the compositions of such song writers as H. G. Nägeli, Fr. Silcher, C. H. Rink, Fr. Kuecken, and the higher classical composers, Beethoven, Mozart, Mendelssohn, Schubert, Von Weber, Handel, Schumann, Kreutzer, Abt, Haydn, Rossini, and others, who furnish the best selections for pupils in their fifteenth year and upward.

4. The feasibility of forming a library of pieces of music of permanent value for the different ages of youth—say, for example, selections from such composers as Nägeli for pupils from 5 to 10 years, and from such as Mendelssohn for pupils from 11 to 15 years. Discussion.

5. The danger of confining the course of study in music for a too long period to reading and singing mere mechanical exercises devoid of artistic merit and empty of all thought and feeling. Discussion.

6. The importance of including in the child's musical course popular songs of a permanent character, such as the national patriotic airs, the great religious hymns, the emotional utterance of pure sentiments, like love of home, friendship, generosity, industry, sobriety, respect for others, self-denial, and general right doing. Discussion.

THURSDAY, JULY 27, 9.30 A. M.

*General topic: The qualifications requisite for a teacher of vocal music.*

1. His knowledge of the physiology and hygiene of the vocal organs; the degree of strain that the vocal chords will bear without injury at the periods of growth from 5 to 15 years. Discussion.

2. His ability to accompany the voice with some instrument, say the piano or violin. Discussion.

3. His knowledge of classic music and of the best course of study to lead up to it. Discussion.

4. His knowledge of methods of instruction. Discussion.

5. Is a knowledge of the higher science of counterpoint essential to the special teacher of vocal music, in view of the alleged fact that if he lacks such knowledge he will not be able to direct the course of musical study progressively from the elements toward a sufficiently high goal? Discussion.

6. What musical studies in the great masters should the teacher keep up from year to year for the sake of his own improvement and culture? Discussion.

FRIDAY, JULY 28, 9.30 A. M.

*General topic: The methods of teaching and learning vocal music.*

1. What are the respective functions of the regular class teacher and the special teacher of vocal music? Discussion.

2. The relative importance of correcting errors in musical enunciation; in keeping time; in proper expression; in proper posture of the body; opening the mouth; breathing; in attempting to sing notes of too high or too low a pitch for the degree of physical development. Discussion.



3. The danger of laying too much stress on the mechanical part of singing to the neglect of musical expression. Discussion.

4. The systems of musical notation—tonic *sol-fa*—"movable *do*" and "fixed *do*" systems. Discussion.

5. What pupils, if any, should be excused from the musical exercises of the school-room? Discussion.

### TECHNOLOGICAL INSTRUCTION.

FIRST SESSION, WEDNESDAY, JULY 26, 9.30 A. M.

Address by Gen. Francis A. Walker, president of the Massachusetts Institute of Technology, president of the department.

Thesis: How far do the technological schools, as they are at present organized, accomplish the training of men for the scientific professions, and how far and for what reasons do they fail to accomplish their primary purpose? Prof. R. H. Thurston, of Cornell University, and Prof. John M. Ordway, Tulane University, New Orleans. Discussion.

SECOND SESSION, THURSDAY, JULY 27, 9.30 A. M.

*General topic: Educational value of technical study.*

1. Thesis: Workshop practice as an educational means. President Henry Morton, Stevens Institute of Technology, Hoboken, N. J. Discussion.

2. Thesis: The educational value of the study and practice of chemistry. Prof. Ira Remsen, of Johns Hopkins University. Discussion.

3. Thesis: The early history and organization of the Sheffield Scientific School at New Haven. Discussion.

4. Thesis: The educational value of laboratory work in exact measurement. Prof. A. M. Mayer, of Stevens Institute. Discussion.

5. Thesis: The educational value of the laboratory study of electricity. Discussion.

THIRD SESSION, FRIDAY, JULY 28, 9.30 A. M.

1. Thesis. The educational value of work in mechanical drawing and architectural drawing. Prof. G. Lanza, of Massachusetts Institute of Technology. Discussion.

2. Thesis: Shop work and drawing as a means of developing slow pupils. Prof. R. H. Richards. Discussion.

3. Thesis: The educational value of natural science. Discussion.

4. Thesis: The educational value of applied mathematics, including engineering. Prof. F. R. Hutton, of New York City. Discussion.

5. Thesis: On the educational value of pure mathematics. Prof. H. T. Eddy. Discussion.

6. Thesis: On the educational process of training an engineer. Discussion.

### INDUSTRIAL AND MANUAL INSTRUCTION.

FIRST SESSION, WEDNESDAY, JULY 26, 9.30 A. M.

Introductory address by the president of the department, Prof. J. D. Runkle.

1. Thesis: The new demands which the world's industries make upon the elementary schools. This question will be considered under the heads of ethics, education, economics. Prof. C. M. Woodward, LL. D., of Washington University, St. Louis. Discussion.

2. Thesis: In courses of mechanic arts instruction in wood and metals, consider the relative educational values of (a) a series of graded models embracing the fundamental principles of the art; (b) a series of completed and more or less useful articles; (c) a shorter course in the arts, and then a specialization with reference to some definite industrial pursuit, as in the French schools. M. Eugène Martin, directeur de l'école primaire supérieure, Paris. Discussion.

SECOND SESSION, THURSDAY, JULY 27, 9.30 A. M.

1. Thesis: The claims of the two systems of manual training known as: (a) The Russian. M. Kovalevsky, official delegate from Russia, Dr. H. H. Belfield, of the Chicago manual training school. (b) The Swedish, or Slöjd. Prof. Gustaf Larsson, principal of the Slöjd training school of Boston. Discussion.

2. Thesis: Since all industrial products involve form, it follows that all industrial instruction should have an æsthetic basis in the study of the general principles which underlie all tasteful and graceful forms, and this study should be regarded and ranked as of equal educational value with the mechanic art processes. Discussion.

## THIRD SESSION, FRIDAY, JULY 28, 9.30 A. M.

1. Thesis: Primary schools. Into what grades and with what subjects should industrial and manual instruction be introduced? Hon. W. B. Powell, superintendent of schools, Washington, D. C. Discussion.

2. Thesis: Primary schools. In these grades should boys and girls receive the same instruction? Discussion.

3. Thesis: Grammar schools. Should boys and girls have the same industrial and manual instruction in all the grades? If not, what should the difference be? Mr. Edward Boos-Jegher, official delegate of the Swiss Confederation to the Columbian Exposition. Discussion.

4. Thesis: Mechanic art high schools. The place such schools hold in a public educational system. If they are regarded as special technical schools, to what extent may they be used as fitting schools for industrial pursuits? Discussion.

## BUSINESS EDUCATION.

## FIRST SESSION, WEDNESDAY, JULY 26, 9.30 A. M.

[Persons whose names are marked thus \* are not expected to be present.]

1. Hon. C. C. Bonney, president of the World's Congress Auxiliary, and Mrs. Potter Palmer, president of the woman's department, will address the congress some time during its sessions.

2. Opening address by the president of the department, Prof. Silas S. Packard. Packard's Business College, New York City, on the "Evolution of the business college."

3. "Practical advantages of business college training," Col. George Soulé, Soulé's Business College, New Orleans. Discussion.

4. "Business college teachers and their equipment," Prof. J. M. Mehan, principal Capital City Commercial College, Des Moines, Iowa. Discussion.

5. "Reciprocal relations and benefits of business colleges and other departments of education," Hon. Ira Mayhew, LL. D., Detroit. Discussion.

6. "The relation of business college instruction to industrial, commercial, and financial interests," Prof. A. D. Wilt, principal of Miami Commercial College, Dayton, Ohio. Discussion.

## SECOND SESSION, WEDNESDAY, JULY 26, 2 P. M.

[Hon. IRA MAYHEW, LL. D., will preside.]

1. "Graded courses in business education," Prof. H. M. Rowe, Ph. D., president Curry University, Pittsburg, Pa. Discussion.

2. "Limitations of business college instruction," Prof. W. E. McCord, principal Peoria Business College, Peoria, Ill. Discussion.

3. "Business college training in countingroom work," Prof. G. W. Elliott, principal of Elliott's Business College, Burlington, Iowa. Discussion.

4. "Higher aspects of business education," Prof. R. E. Galleggar, principal of Canadian Business College, Hamilton, Ontario. Discussion.

## THIRD SESSION, THURSDAY, JULY 27, 9.30 A. M.

[Col. GEORGE SOULÉ, New Orleans, will preside.]

1. "Business colleges and the art of writing," Prof. Daniel T. Ames, editor Penman's Art Journal, New York City. Discussion.

2. "The business woman as daughter, wife, mother, and friend," Mrs. Sarah A. Spencer, principal Spencerian Business College, Washington, D. C. Discussion.

3. "The value of a business education to women," Mrs. Charlotte Emerson Brown,\* president General Confederation of Women's Clubs, East Orange, N. J. Discussion.

4. "Business training for the world's charities," Miss Clara Barton,\* president of the Society of the Red Cross, Washington, D. C. Discussion.

## FOURTH SESSION, THURSDAY, JULY 27, 2 P. M.

[Prof. R. E. GALLEGHAR, Hamilton, Ontario, will preside.]

1. "Stenography and typewriting as branches of business education," Isaac S. Dement, Chicago, Ill. Discussion.

2. "Teaching morals and manners through shorthand instruction," Mrs. S. S. Packard, Packard's Business College, New York City. Discussion.

3. "What stenographers and the business community demand of business colleges in shorthand and typewriting instruction," J. L. Bennet, president World's Congress of Stenographers.

## FIFTH SESSION, FRIDAY, JULY 28, 9.30 A. M.

[Prof. J. M. MEHAN, Des Moines, Iowa, will preside.]

1. "Economics and social science in business education," Edmund J. James,\* Wharton School of Economy and Finance, Philadelphia; Dr. Richard T. Ely,\* department of economics, social science, and history, University of Wisconsin, and Prof. Fred W. Spiers, superintendent People's Institute, Milwaukee, Wis.

2. "A merchant's view of the business college," H. N. Higginbotham, president World's Columbian Exposition, Chicago. Discussion.

3. "A banker's view of the business college," Lyman J. Gage, treasurer World's Columbian Exposition, Chicago. Discussion.

4. "The science of civics," Henry Randall Waite, Ph. D., president American Institute of Civics.

5. It is hoped that the concluding address of the congress will be delivered by Dr. James MacAlister, president Drexel Institute, Philadelphia.

## PHYSICAL EDUCATION.

## FIRST SESSION, WEDNESDAY, JULY 26, 9.30 A. M.

Address by Dr. Edward M. Hartwell, director of physical training, public schools, Boston, Mass., president of the department.

1. Thesis: Some unsolved problems in physical education. Dr. T. D. Wood, professor of hygiene and physical training, Leland Stanford Junior University, Palo Alto, Cal. Discussion.

2. Thesis: The cultivation of the human body. Dr. Angelo Mosso, professor of physiology, University of Turin, Turin, Italy. Discussion.

3. Thesis: The psychological aspects of exercise with and without apparatus. Dr. G. W. Fitz, instructor in physiology and hygiene, Harvard University, Cambridge, Mass. Discussion.

4. Thesis: Should medical schools teach physical training? Dr. Lena V. Ingraham, Boston, Mass. Discussion.

5. Thesis: Supervision of school gymnastics by qualified physicians. Dr. Helen C. Putnam, Providence, R. I. Discussion.

6. Thesis: The Royal Central Gymnastic Institute of Stockholm—its aims and work. Prof. L. M. Törngren, director of Royal Central Gymnastic Institute, Stockholm, Sweden. Discussion.

7. Thesis: How should physical exercises for school purposes be selected and graded? Dr. J. Gardner Smith, supervisor of physical training in public schools, New York City. Discussion.

## SECOND SESSION, THURSDAY, JULY 27, 9.30 A. M.

1. Thesis: The revival of Greek gymnastics in Germany. Jaro Pawel, university teacher, Vienna, Austria.

2. Thesis: The movement for promoting popular and youthful sports in Germany. James L. Hughes, inspector of schools, Toronto, Ontario. Discussion.

3. Thesis: English experience in providing the poor of cities with out-of-door facilities for exercise. The Right Honorable the Earl of Meath, London, England. Discussion.

4. Thesis: The athletic movement in France. Baron Pierre de Coubertin, Paris, France. Discussion.

5. Thesis: The observation and study of movement and mental states. Dr. Francis Warner, physician to London Hospital, London, England.

6. Thesis: The relation of physical training to other forms of education. Dr. G. Stanley Hall, president Clark University, Worcester, Mass. Discussion.

7. The physical training of deaf mutes. A. Gutzmann, instructor in City Institute for the Deaf and Dumb, Berlin, Prussia.

8. Thesis: The physical training of criminals. Dr. H. D. Wey, State Reformatory, Elmira, N. Y. Discussion.

## THIRD SESSION, FRIDAY, JULY 28, 9.30 A. M.

1. Thesis: The North American Turnerbund; its history, aims, and achievements. H. Muench, ex-president North American Turnerbund, St. Louis, Mo.

2. Thesis: The normal school of the North American Turnerbund. J. Toensfeldt, St. Louis, Mo.

3. Thesis: The physiology of the German system of gymnastics. Hans Ballin, Sandusky, Ohio.



4. Thesis: School gymnastics in the Kingdom of Saxony. Moritz Zettler, teacher in gymnasium in Chemnitz, Saxony.
5. Thesis: Swedish school gymnastics in England. Mme. Bergman, Oesterberg, London, England. Discussion.
6. Thesis: Swedish military gymnastics. Capt. Carl Silow, instructor, Royal Central Gymnastic Institute, Stockholm, Sweden. Discussion.
7. Thesis: The laws of muscular and nervous fatigue and their relation to physical education. Dr. Warren P. Lombard, professor of physiology, University of Michigan, Ann Arbor, Mich. Discussion.
8. Thesis: Physical education in the South. Dr. William A. Lambeth, University of Virginia, Charlottesville, Va.
9. Thesis: Physical education in Canada. Dr. R. Tait, Mackenzie, McGill University, Montreal, Canada.
10. Discussion: How far is it desirable to attempt to secure State legislation (in the United States) making physical training compulsory in the public schools?

## RATIONAL PSYCHOLOGY IN EDUCATION.

FIRST SESSION, WEDNESDAY, JULY 26, 9.30 A. M.

Address by the president of the department, Rev. James McCosh, D. D. Topic: Reality—What place has it in philosophy? Discussion.

11.30 A. M.

Thesis: Can psychology be founded on consciousness alone, or does it need physiology? Prof. Josiah Royce, of Harvard University. Discussion.

SECOND SESSION, THURSDAY, JULY 27, 9.30 A. M.

Thesis: Perception, conception, and primitive truth. Prof. G. T. Ormond, of Princeton University. Discussion.

11.30 A. M.

Thesis: Aristotle's doctrine of a first principle, as set forth in the eleventh book of his *Metaphysics*. The Very Rev. A. F. Hewit, D. D., of the Catholic University of America. Discussion.

THIRD SESSION, FRIDAY, JULY 28, 9.30 A. M.

Thesis: Self-activity in education. Dr. J. Gould Schurman, president of Cornell University. Discussion.

11.30 A. M.

Thesis: Wundt's Psychology of the Will. Prof. E. B. Titchener, of Cornell University. Discussion.

## EXPERIMENTAL PSYCHOLOGY IN EDUCATION.

It has been decided, after much consideration and wide conference, to devote the entire three days to the subject of child study. Within a very few years several societies have been formed for this purpose; several journals have been started; the school children in many cities of this country and Europe have been measured or tested as to the rate of growth of body and muscular and mental power; various classes of defect of sense, limb, mind, character, form of error in school work and of ignorance on entering school, have been tabulated. From these results a new body of literature is being developed, which throws much light upon the controllable causes, whether of excellence or defect, and contains many suggestions on the method and matter of teaching, and promises to show how instruction can be made more effective as well as to point out the true beginning of instructions in the entire group of psychological subjects.

It is hoped that not only all teachers, anthropologists, and physicians interested in this work, but parents and others representing different lines of study and from locations widely separated, may here meet, stimulate, and encourage each other by personal acquaintance, mutual suggestion, and plans for future cooperation.

The organization of a national society with officers from different States will be considered.

All papers are strictly limited to twenty minutes. It is expected that discussions and reports will be confined to ten minutes each, in the hope that many workers may be heard from and results and methods from many sources may be recorded.

G. STANLEY HALL,  
President of Department.

## FIRST SESSION, WEDNESDAY, JULY 26, 9.30 A. M.

1. Thesis: Child study as a basis for psychology and psychological teaching, by G. Stanley Hall, president of Clark University, Worcester, Mass. Twenty minutes. Discussion.
2. Thesis: The imaginations of children, by E. Harlow Russell, principal of the State Normal School, Worcester, Mass. Twenty minutes. Discussion.
3. Thesis: Mental waste and economy, by Prof. G. T. W. Patrick, State University of Iowa. Twenty minutes. Discussion.
4. Thesis: Exercise of the will in children, by Prof. Charles McMurry, State Normal School, Normal, Ill. Fifteen minutes. Discussion.
5. Dominant seventh in education, by Miss H. E. Hunt, Ph. D., Brookline, Mass. Ten minutes. Discussion.
6. Dreams, by Prof. James Sully, London, England. Read by abstract. Ten minutes. Discussion.

## SECOND SESSION, THURSDAY, JULY 27, 9.30 A. M.

1. Thesis: A study of children's theology, by Prof. Earl Barnes, Leland Stanford Junior University. Twenty minutes. Discussion.
2. Thesis: Child study as a basis for pedagogy, by W. H. Burnham, instructor in pedagogy, Clark University, Worcester, Mass. Twenty minutes. Discussion.
3. Thesis: The new psychology in normal schools, by Miss Lillie A. Williams, State Normal School, Trenton, N. J. Fifteen minutes. Discussion.
4. Constitutionally bad spellers, by Miss Adelaide E. Wyckoff, Packer Institute, Brooklyn, N. Y. Fifteen minutes.
5. Principles of physical training and their application to the prevention of stuttering in children, by E. M. Hartwell, M. D., director of physical training, Boston public schools.

## THIRD SESSION, FRIDAY, JULY 28, 9.30 A. M.

1. Thesis: On the observation and study of movements and mental states, based on the examination of some 50,000 children, by Francis Warner, M. D., of London, England. Twenty minutes. Discussion.
2. Thesis: Development of motor ability in school children, by Prof. W. L. Bryan, University of Indiana. Twenty minutes. Discussion.
3. Thesis: Attention and association in children, by T. N. Balliet, superintendent of schools, Springfield, Mass.
4. Self-consciousness in children, by F. W. Parker, president Cook County Normal School. Twenty minutes. Discussion.
5. A pedagogical need, by Dr. E. F. Buchner, lecturer on pedagogy, Yale University. Fifteen minutes. Discussion.

## DEPARTMENT OF EDUCATIONAL PUBLICATIONS.

## FIRST SESSION, THURSDAY, JULY 27, 9 A. M.

*Topic: Present ideals in educational journalism.*

Address of welcome, Hon. Henry Barnard, editor of the American Journal of Education.

Present ideals in educational journalism. Paper by C. C. Rounds, principal of the State normal school, Plymouth, N. H.

From the superintendent's point of view. Paper by Andrew S. Draper, LL. D., superintendent of schools, Cleveland, Ohio.

The educational press and the public. Address by Col. J. B. Merwin, editor of The American Journal of Education, St. Louis.

Discussion. The following gentlemen have kindly consented to take part: Amos M. Kellogg, editor of the New York School Journal; W. A. Bell, editor of the Indiana School Journal; R. J. Guinn, assistant state school commissioner, Georgia, and editor of The Southern Educational Journal; Monsieur B. Buisson, director of the College Alaoui, Tunis, late French commissioner to the expositions at New Orleans and Melbourne; Foster Watson, esq., London; Joseph H. Cowham, principal Wesleyan Training College, London; J. E. Wells, editor of The Educational Journal, Toronto; Ramon Manterola, Ministerio de Gobernación, editor del Boletín Bibliográfico y Escolar, Tacubaya, Mexico.

SECOND SESSION, FRIDAY, JULY 28.

*Topic: The history of educational journalism.*

In France, M. G. Compayré, rector of the Académie de Poitiers, and president of the French pedagogic delegation to the World's Fair.

In Germany (Hanover), H. Wanner, Reallehrer, Hanover, recently editor of the Hanover Schulzeitung.

In Bohemia, Joseph Klika, Redakce, Paedagogickych Rozhledu, Prague.

In Italy, Sr. Piéro Barbèra, editor, Florence.

In Mexico, Sr. V. Guzman, editor of La Educación Moderna.

In Canada, James L. Hughes, inspector of schools, Toronto.

In the United States:

In New England, W. A. Mowry, Ph. D., superintendent of schools, Salem, Mass.

Dr. Barnard's American Journal of Education, Will S. Monroe, Leland Stanford Junior, University.

In New York and New Jersey, Pennsylvania, Virginia, West Virginia, and Maryland, C. W. Bardeen, editor of The School Bulletin.

In the Carolinas and the Gulf States, James K. Powers, president of the State Normal College, Florence, Ala.

In Louisiana, Texas, and Arkansas, Prof. Henry E. Chambers, Tulane University, New Orleans.

In Kentucky and Tennessee, R. H. Carothers, editor of The Educational Courant, Louisville.

In Ohio, Samuel Findley, editor of The Ohio Educational Journal.

In Michigan, Henry A. Ford, Pontiac.

In Indiana, George F. Bass, editor of Indiana Young People.

In Illinois, John W. Cook, LL. D., president of Normal University.

In Iowa, Henry Sabin, editor of The Iowa Journal of Education.

In Wisconsin, Prof. J. W. Stearns, University of Wisconsin, editor of The Wisconsin Journal of Education.

In Minnesota and the Dakotas, S. S. Parr, superintendent of schools, St. Cloud, Minn.

In Missouri, Howard A. Gass, editor of The Missouri School Journal.

In Kansas, Colorado, and Utah, John MacDonald, editor of The Western School Journal.

In Nebraska, Wyoming, Montana, and Idaho, J. H. Miller, editor of The Northwestern Journal of Education.

In California, Washington, and Oregon, John Swett, superintendent of schools, San Francisco, Cal.

Special and class journals, W. N. Hailman, superintendent of schools, Laporte, Ind.

## II.—ADDRESSES OF WELCOME.

ADDRESS BY CHARLES G. BONNEY, PRESIDENT OF THE WORLD'S CONGRESS AUXILIARY.

FRIENDS OF UNIVERSAL EDUCATION, EDUCATORS OF MANY LANDS: I bid you welcome to the International Congress of Education.

The special educational congresses which have occupied the past eight days are closed, and the International Congress of Education, in which the leading departments of education will have appropriate presentation, is about to open. That the eighty-six sessions of the fourteen congresses held in this building during the time specified have more than realized the expectations entertained in regard to them, is agreed by all whose opinions I have heard expressed. We have enjoyed a series of gratifying surprises in the attendance given, the interest manifested, and the high character of the proceedings. Most noteworthy has been the spirit of peace and progress, which has reigned supreme. Distinguished educators from many countries have met together as old friends to consider common interests and aims.

If the special congresses have been so satisfactory, what may we not expect from the International Congress of Education, in which all will take a part, with its fifteen separate department congresses, presenting a programme with forty-seven sessions?

The original announcement of the World's Congresses of 1893, issued in September, 1889, included, among other subjects, "Educational systems, their advantages and their defects, and the means by which they may best be adapted to the enormous increase in all departments of knowledge."

The educational systems of the past have been outgrown. This fact is so obvious that it needs neither argument nor illustration. Those systems were but local and temporary, and could not permanently endure. The old education had no place for



those important departments which are the peculiar glory of the new. The kindergarten, manual and art training, technological instruction, business education, practical psychology, are new gifts to the educational world.

Modern science is itself a new world, created within the memory of living men. In all of the old branches of learning there has been a wonderful increase of knowledge. There is now more of language and literature; more of natural science; more of political and social science; more of moral and intellectual science; more of technological and constructive science, and more of other important branches of knowledge, than can be mastered during the school years.

What can be done to meet this emergency?

The cruelty of cramming has been tried and abandoned as worse than utterly useless. The liberty of election has been enlarged and reenlarged without fully satisfactory results. But the difficulty not only remains, it increases. We can not meet it by suppressing knowledge; we must endeavor to do so by enlarging the means and improving the system of education. The old curriculum was a pamphlet; the new curriculum is a volume, growing larger from year to year.

While the learned world ponders the new educational problems and seeks a means of their solution, a new and tremendous influence enters the field and asks attention. It is the spirit of the new age, demanding international fraternity and cooperation in every department of civilized life. The institutions of learning have more than willingly responded to this call, and have manifested a desire to accede to it so far as sound reason may lead the way. A true and enduring educational system must have its national and international as well as its local relations.

The time has come to discriminate the universal from the particular, the requirements of all from the needs of the few, and form an educational system in which those discriminations will be preserved. The programmes of the educational congresses held during the past eight days, and those which are now to follow, show that the elements of a true educational system are at last at command. To some extent the characteristics of the new education may already be discerned.

(1) While in the primary schools the kindergarten and the first rudiments of manual and art training will lay the foundation for future culture, the instruction will, for the most part, be limited to such knowledge as is universally necessary for intelligent human relations. In a word, the instruction imperatively demanded for the everyday needs of all classes will be the chief object of the primary schools.

(2) In the secondary schools will be given a knowledge of the existence and nature of all the sciences, arts, and callings, so far as may be necessary to enable the learner to select those in which he will be most likely to find his appropriate life work. The learner must know that there is such a science as chemistry, such an art as engineering, and their general nature and scope, to enable him to decide whether in either of them, or in some other pursuit, he will be likely to be most serviceable to himself and his fellow-men.

(3) In the higher institutions of learning will naturally be given that thorough and prolonged culture in a carefully selected course of study, chosen with reference to a proposed life occupation, that careful and efficient training and discipline which will qualify the student for the best discharge of the duties of that occupation.

(4) In the professional and technological schools there will be given both a theoretical and a practical training for the particular requirements and duties of a selected calling, such as law, medicine, engineering, agriculture, or any other.

Thus may be secured, in a rational order, that general knowledge which intelligent persons in all countries should possess; that mental culture and discipline of the brain which correspond to the skill and accuracy of the artisan's accomplished hand, and that special and adequate preparation required for the successful pursuit of a special calling.

Among the signs of the times which distinguish the new education from the old, a few may be briefly noticed.

First in order and importance I name the kindergarten, which for the first time in the whole history of the race actually established in the world the great idea that the schoolroom can and should be made a place of delight, and that a love of learning is vital to its attainment.

Next may be mentioned the training of the hand to perform what the mind has been taught to conceive and plan, thus providing against that "pathetic helplessness" sometimes found in very learned men.

Another important sign of substantial progress is in the introduction of practical psychology, to give both teacher and student that knowledge of the mind, its constitution, faculties, and operations, without which serious errors can not be avoided.

Equally important is the idea, now well established, that the farmer, the manufacturer, the merchant, or other business man, needs a thorough education for his calling quite as much as do the professional classes for theirs. Modern experience has abundantly shown that a farm abandoned by ignorant incompetence as worn-out and worthless can be made to blossom like the rose under an application of intelli-

gent skill and scientific knowledge such as the higher institutions of learning impart.

Of vast importance and significance is the new movement of colleges and universities, under the name of university extension, to ally themselves with the people. That alliance will prove of inestimable value to both.

In the highest sense, there is but one education, of which all schools and all instruction should form appropriate parts. If one cannot be a master of philology, or astronomy, or geology, or architecture, or engineering, it should, nevertheless, be his privilege to know enough of each to follow with pleasure and with benefit the achievements of its leaders.

In the new education we shall miss many things with which we have been familiar in the old. Among them will be the incredible folly of attempting to eradicate the natural differences of mental endowment, and to reduce all to the dead level of the average attainments.

We shall miss the barbaric system of rewards and punishments, under which the most heroic efforts to overcome natural deficiencies were visited with humiliation, while merely natural gifts, without merit in their application, were conspicuously rewarded.

The new education will endure, because it will rest upon correct and eternal principles; because it will be supported by an enlightened public opinion, and by the settled public policy of the enlightened nations of the world. The basis of this public policy is the truth that the true wealth of nations is in their men, and that as a mere matter of self-interest they must provide for all, even the humblest, enough education to stimulate the development of latent genius.

The new education, extended as it will be throughout the world, will do as much as, if not more than, any other agency to promote the unity and peace of mankind. For by education we mean not merely the training of the intellect; we mean also the culture of the heart and the hand. The golden circle of education embraces not only literature, science, and art, but it includes as well the whole broad domain of virtue, morals, and religion.

In conclusion, I extend to this World's Educational Congress my highest wishes for its success in every department, with many regrets that the arrangements for the congresses to be held during the month of August will prevent me from attending the sessions, in the proceedings of which I shall nevertheless feel a profound interest.

REPORT OF COMMITTEE OF ARRANGEMENTS, NATIONAL EDUCATIONAL ASSOCIATION, ON INTERNATIONAL CONGRESS OF EDUCATION, BY HON. WILLIAM T. HARRIS, CHAIRMAN.

*To the World's Congress Auxiliary of the World's Columbian Exposition:*

The committee on international congress of education, appointed at your suggestion by the National Educational Association of the United States, beg leave herewith to report that they have extended due invitations to the friends of education and the workers in its several fields, in all foreign countries, and in the several States and Territories of the United States. Sympathetic response has been made everywhere to these invitations, and the number of those expressing intention to be present is larger than we had reason to hope, when we consider the number of foreign delegates enrolled at world's congresses hitherto held; and this, too, without making any deduction for the much greater distances to be passed over to reach Chicago than to reach London, or Brussels, or Paris, or New York, from the centers of population.

In preparation for the discussions to take place this week, the committee has endeavored to select questions of international interest—questions that affect the management of schools in all countries, wherever they are. And the renewed and increasing interest in school education in all civilized countries at this time is an occasion for congratulation among all friends of human progress.

The central place of school education among the great regenerating movements of modern civilization is obvious when one looks over the list represented in the series of congresses which have held their sessions in this edifice since its opening in May, or are to follow between this and the middle of October. The common characteristic of movements that help forward civilization is that they increase self-help in the individual. There is no institution that does so much for increasing the power of self-help as the good school. It uses the time of youth—the time not yet of full value for productive industry, and yet most fruitful for growth in intellect and power of will. Education gives directive power—the power to combine things, and the power to combine men.

It is therefore with a strong show of reason that the teachers of our schools point to the exhibits in the vast aggregate of the World's Fair, and claim a large share in the development of the producing causes that have furnished the display of industry and skill and taste.



It is confidently hoped that the discussions of these congresses will help make clear to us not only the strong points of our school systems, but also the needs and defects which exist and prevent the highest achievement.

The fifteen departments of this congress, which hold their sessions in the mornings of Wednesday, Thursday, and Friday of this week, represent, in equal proportions, the new and the old; one-half devoted to understanding and explaining what is already established and in vogue, the other half devoted to showing the claims of what is new, and urging its adoption into the school system. The educational problems are all to be discussed, if wisely discussed, in the light of these two sides or tendencies. The committees on programmes have kept this in view.

In the department of higher education the distinction between the college and the university is brought prominently forward, and the relation of a course of study such as the old college furnished, namely, for discipline, and for giving the student a survey of the whole field of human learning—the relation of this to the specialization of the activities of the student in lines of original research. One party in higher education will contend that the old college course should be retained, and held to its purpose of giving unity and consistency to the knowledge of the student before he enters on his specialties, whether law, medicine, divinity, or some special branch of science or art; the other party will contend for a policy that discounts the so-called liberal education, and the boasted advantages of a prolonged study of the classical languages and pure mathematics, and contend for the earlier introduction of specialization.

The department congress of technology has prepared for itself a highly valuable series of discussions on the educational value of such branches as workshop practice, laboratory work in exact measurement, in chemistry, in electricity; what the student gets from mechanical and architectural drawing, and from pure and applied mathematics, what from natural science, and what from his training for an engineer. These studies in educational values have a direct bearing on the most fundamental question of higher education—the question whether the course of study in our colleges merits the high claims made for it as being one of a specially high educational value; as being, in fact, the course that enlightens the student, and gives him balance of mind and a judicial habit of thought.

To this great question in higher education, also, the congress of secondary education contributes its quota by setting in the foreground questions of the practical value of science as an educative study as compared with language, and, furthermore, the value of the modern languages as compared with Latin and Greek.

This question of the educational value of the classic and modern studies, of the languages versus the sciences and mathematics, is not a local one, of interest only to our people, but a question more and more coming to the front in France and England, and even in Germany; and we are fortunate in having with us distinguished delegates from all those countries who have weighty words to say in its discussion.

A kindred question occupies a portion of the programme of the congress of elementary education. What branches of science and what branches of industrial instruction should be introduced into the elementary schools, and how far may the old course of study in language, numbers, geography, and history be made to recede to give room for the new branches? The department congresses of industrial and manual instruction, together with the congresses on art instruction and music, emphasizes this question in elementary education, and repeat in many new phases the demand for broadening the course of study in elementary schools.

The National Geographic Society has been invited to occupy the programme of Thursday in the elementary department, and valuable discussions are provided to bring out the needs and defects of the present methods of instruction, together with the desired remedies.

But the discussions of the third day in the elementary congress relate to the most important of all topics, that of citizenship and morals.

Those familiar with the work of the directors of popular education abroad, especially in England, France, and Germany, know the stress that is laid on morals and citizenship, and the interest that is shown in questions of religious education as an essential item on the programmes of the schools. There are two parties of earnest men and women, the one holding that the separation of church and state should be carried so far as to make the schools entirely secular, and the other holding that instruction in religion should be placed on the programme side by side with instruction in language and science.

Somewhat related to this question of ethical and civic instruction are most of the questions taken up in the kindergarten congress. The kindergarten attempts to provide a course of instruction that is half school and half family nurture, in order that the rigid discipline in obedience to law and order which characterized, and, I may say, still characterizes, the old-time primary school, may not have the effect of chilling the enthusiasm of the young child and arresting his development along lines of growth that tend to a completer individuality and a higher type of manhood and



womanhood. In the discussions of the week there is a large space given to the very important differences between the epochs of childhood, say from 4 to 6 years, and the epoch of youth, say from 7 to 14 years. The transition of the mind from the so-called symbolic stage of childhood to the stage in which the child can readily learn the conventional methods of representing language and numbers is the topic which needs most illumination in the study of methods of the primary school. The kindergarten, moreover, as containing the beginnings of all that is to be unfolded in the later schools, takes up again the question of the educative value of hand occupations, so often discussed in other departments and found to be so attractive a topic in the educational conferences of all nations.

The congress on the professional training of teachers has as its most important topic the difference between the normal school which prepares teachers for the work of the elementary schools and the college, or university which gives the degree of doctor of pedagogy. The course of study in the regular normal school, on the other hand, is defined by contrast with the ordinary high school or academy (secondary schools), and it is claimed that the normal school introduces comparative study—like the college, seeking to understand each branch in the light of the other branches of human learning—while secondary education usually teaches its branches as steps to higher studies, and not by a comparative method.

The college or university course in pedagogy, it is contended, should make its degree stand for original work of investigation in the lines of the literature and history of education as well as in lines of investigation into the growth or development of the child physically and mentally.

No more important topics than these are on the programme for the week as regards the improvement of our teachers.

But there are two department congresses auxiliary to this department of professional training, the one on rational psychology, which considers the transient and permanent characteristics of mind, seeks to discover the fundamental characteristics which contradiistinguish mind from mere biological phenomena—the mind as knowing primitive truth and as pure self-activity. The other congress, that of experimental psychology, devotes all its discussions to questions of child study in physical, emotional, intellectual, and volitional aspects.

The teacher, it is said, should understand psychology because he deals with the growth of the mind. It is quite recent that a great revival has begun in this country of the study of psychology.

The supervision of schools, which becomes every day more important as people come to live more and more in cities and villages, discusses the questions relating to the organization of schools, especially such as relate to the examination of teachers and the improvement of their work.

An interesting question, especially interesting in the presence of this great World's Exposition of the products of human industry, is that of the relation of technical skill and manual processes to the training of the æsthetic sense—the cultivation of the taste for the beautiful.

This question is brought out in many of its phases in the congress on art instruction, and still more of its phases are taken up in the congress on industrial and manual instruction.

The difference between the great systems of training—those of the Swedish Slöjd, the Russian school-shop, and the French system—will be better understood, it is believed, at the close of these discussions, and that this will lead to more profitable methods of preparation for our industries.

The department congresses of physical education, of educational publications, of vocal music, and of business education, have prepared pointed questions relating to methods and modes of management, and their programmes will invite large audiences of interested teachers.

With this brief sketch of the points in the programme herewith presented, I beg leave to thank you, Mr. President of the World's Congress Auxiliary, and through you, your aids and assistants in the local committees of education, for your uniform kindness and helpfulness in arranging the details of this congress. I thank you in behalf of the committee of arrangements, and in behalf of the National Educational Association.

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#### ADDRESS BY DR. JAMES B. ANGELL, PERMANENT CHAIRMAN.

I think you will all agree with me that the work of these educational congresses underlies, in some sense, the work of all the other congresses which have been or which may be held at this time. Perhaps I might better say that the work of this congress overarches, enfolds, and encompasses the work of all the other congresses, as the sky encompasses and enfolds the earth; for all art, and all sciences—what hope of progress have these, what hope of perpetuity have they, except as the moral and intellectual discipline which we are engaged in cultivating is preserved?

As we walk through the avenues of the "White City," and stand fascinated and enchanted with the splendid architecture upon the right hand and upon the left, and behold the marvelous collection of the works of industry and of art from all parts of the civilized and from many parts of the uncivilized world, think you there is not one of us who has not at times felt the inexpressible pathos of the thought which has brought tears to so many eyes—the thought that in four short months all this architecture and all this marvelous collection of all the treasures of industry and of art shall have vanished forever, like the unsubstantial fabric of a vision, leaving not a rack behind? But the intelligence which has formed them, the genius which has fashioned them, the great ideas which are incorporated in them—these abide and shall abide forever and forever; and it is to these that you and I and every teacher address our work day by day. We work in that which is eternal and which shall never pass away. Therefore it is, I think, that the interest in education is so abiding, is so widespread, is so universal to-day in every part of the civilized globe. Therefore it is that to-day our distinguished friends come to us, having made the dreary voyage across the wide waste of seas, and having made the journey across half the continent, to speak to us, in sympathy and in love, of those things which are dear to us and dear to them. We are glad for their presence here to-night; we desire to thank them for their kindness in coming to us. The names and works of some of them have long been known to us, and we give them thanks, and we give God thanks that now their faces and their voices are to be familiar to us, to give us an inspiration, here and now, which shall be with us as a joyous memory and a help forevermore.

Never before was interest in educational things so widespread within the borders of our own land. The last two decades have been creative decades in the work of education. Even in the South, which so long lagged behind the North and West, what a change there has been since the war! Out of the very depths of a misery and a poverty which we in the North can not begin to understand, they too have taken up these great ideas of public education, and have taxed themselves, with a generosity which we can not but admire, for the education both of the white and the black. [Applause.]

It was not long since that I had a conversation with a gentleman who has done more than almost any other for the promotion of education in the South; a prolonged conversation, running until midnight, discussing the practical and difficult problems of the South with a pathos and an earnestness which I shall never forget. At the close of the hours I said to him: "What remedy have you for these terrible problems with which you are confronted there?" He arose, with an expression of anguish, through which yet there was a ray of hope in his face, and with a fervor and an earnestness which I shall never forget, stamping his foot upon the floor, said: "It is very dark; we can hardly see an arm's length before us; but one thing I know; it must be eternally right to educate the negro, to educate and Christianize the negro." [Applause.]

In no subject has there been greater advancement made in the last two decades than in education: how it has been studied historically; how it has been studied psychologically; how it has been studied experimentally. Scientific education has been really created in the United States within the last thirty years. The changes in the college methods of education have been so great within thirty years as to be described by no other name, justly, except that of revolution. Now all the larger colleges and universities are bending their energies to the cultivation of graduate work, that we may achieve something that may truly be called university work in our larger and stronger institutions. And now I hope, as we have come here, we shall get many results from this meeting.

Never was there a programme, I believe, prepared with such care and with such promise as that into which our distinguished friend, Dr. Harris, has thrown his genius and his labor. [Applause.] Where, if ever, has there been such an assemblage of men and women distinguished by experience and study to instruct us in the discussion of the subjects of that programme? And I hope that among all the other results that we shall gain we shall gain this one, viz: to feel the common consciousness of unity among all the grades and ranks of teachers from the highest to the lowest. Let us feel that our work is one work. We have wrought too much in this country in sections, and at cross-purposes, and with a lack of common consciousness and unity of aim.

The old-fashioned college, when I was a boy, was a sort of mythical institution that stood away in the clouds, remote from connection with the common schools, and even with the secondary schools, and the great mass of boys and girls had not a much more distinct idea of what went on within its walls than they have of what goes on in the mosque at Mecca to-night. Thank God that day of isolation of the college is passed. But we still have room to draw the ranks closer together all the way from the women in the kindergarten up to the very highest teacher in the university, and to have a consecutiveness of purpose and of aim and methods that shall bring us all



to one result. For my own part, I never looked upon a woman teaching a primary class of 20 pupils, or a woman teaching a class of a like number in the kindergarten, without having a feeling akin to reverence for her in her work, and I have often said that it seems to me that many of them display more genius than I have ever been able to show in trying to manage a university. I have great respect for them, and I hope that we shall go out from these meetings with a stronger feeling than we have ever had before that our work is one work from the beginning to the end. Therefore let us go back to our schoolhouses and to our class rooms with a strength and an inspiration of that mighty consciousness, that we are, everyone of us, a part of the great army whose thundering tread is shaking the land. Let us go feeling this power, and that we are working as a part of it. [Applause.]

I want even our humble teachers to have some higher appreciation of the honor and dignity that belongs to their work. As they come here and see the noble army of men and women engaged in it, I can not but think that they may return to their work with some new pride in it. Let them reflect for a moment what is the dignity and grandeur of the material upon which they work. It is the soul, the mind of the child, infinitely nobler than the canvass on which Raphael painted the Madonna with a purity born in heaven; purer and nobler than the whitest Italian marble from which Michael Angelo freed from its imprisonment the form of a Moses or of a David. The materials with which they work are not the mere pigments of the painter or the chisel of the sculptor, but the humblest "schoolmarm," the humblest kindergartner that is trying to teach her child some idea of geometrical forms, should remember that she is planting forever in his mind one of the great ideas by which God has builded the world. The humblest "schoolmarm" in the remotest log house in northern Michigan or Wisconsin should remember that when she is teaching the A-B's to the stammering boy at her feet she is placing before him a ladder on which he may yet climb to the stars. That is the work in which you are engaged. Be proud of it! Never be ashamed of it! The rewards in money are small, but the rewards in gratitude and love of your disciples are beyond the purchasing power of gold. The teacher's profession is a fountain of youth. I have seen many a teacher with gray hairs, and some with bald heads, but I never saw an old teacher yet. The smile and play of youth are ever on his face, because he is ever associated with the child and thinking the glad and happy thoughts of children.

We are apt to think that our work is too transitory and that to-morrow it is forgotten; but please remember that the most enduring institutions which the human race has ever established on earth are the schools, colleges, and universities. Great royal houses have risen and fallen, but schools have survived them. Winchester and Eton, Oxford and Cambridge have survived how many a royal line in England! The educational institutions of France have outlived how many a change of government, monarchical and republican! The educational institutions of Europe have seen the map of that country made and remade how many times! Everything in Europe has changed over and over again except the great schools, colleges, and universities; but there they stand, and there they are destined to stand so long as civilization endures.

I hope that I am right as a prophet when I venture to predict that even though nothing else shall endure in these United States, beyond all the changes of political parties, beyond all the changes of society, beyond all the changes of other human affairs, the one thing that is to endure, in my judgment, is our great, free, generous system of public instruction. [Applause.] Parties may come and parties may go, but woe be to any party or any company or any society that with ruthless and profane hands dares to lay hold of that institution for its injury or destruction! [Applause.]

And, my friends, we are proud to come here to-night, representative of many lands, representative of many States in this land, all fired with the same love of this one great theme. May all see the vision of blessings to come in the future from our toil! Let us, I pray you, address ourselves to this work in this high and hopeful spirit to-night, believing that God's blessing will rest with it even to the end. [Applause.]





## CHAPTER II.

### AMERICAN VIEWS AND COMMENTS ON THE EDUCATIONAL EXHIBITS.

CONTENTS.—“*The exhibit of education at the Columbian Exposition,*” by Hon. John Eaton.—“*The educational exhibit at the World's Columbian Exposition,*” by Selim H. Peabody.—“*The World's Fair,*” from *New England Journal of Education*—“*What the educational exhibit shows,*” from *New England Journal of Education*—“*Educational exhibits at the Columbian Exposition,*” by Richard Waterman, jr.—“*Some echoes from the exposition,*” by “S.” in *Education*—“*World's educational exhibits,*” by Will S. Monroe—“*Catholic education at the World's Fair,*” by John J. O'Shea—“*The Catholic school exhibit,*” by a professor of pedagogy.

#### THE EXHIBIT OF EDUCATION AT THE COLUMBIAN EXPOSITION.

By Dr. JOHN EATON,

Ex-United States Commissioner of Education.

Educators largely occupied with eternal verities may become too much absorbed in what the past is supposed to have fixed, and thus fail to meet current demands, or, as the phrase has it, to keep up with the times. They may well recall that no body in the stellar world, coursing through its orbit according to immutable laws, fails to respond to the influence of the most capricious comet that crosses its course. Nor should educators be less ready to gain all possible benefits from the events which cross their path. They can not afford to ignore the epoch-making Columbian Fair. For the teacher it has not only the lessons it offers to all; it has also the great studies in his special duties. In speaking with this emphasis, do not let me be understood as implying that he will experience no disappointments. If we expect it to be ideally perfect our disappointments will be many. If we expect all nations to be officially present or those which participate to exhibit all their attainments proportionately, we will carry away with us a very different idea. While we hear in connection with it so much of progress, we must not forget that motives of gain, of selfishness, will be present as in all human affairs. It will cost money and money must be made. But we shall be able to see more than ever before of what man has accomplished in his various spheres of activity. We might take a trip around the world and fail of opportunities to study great human conditions offered here. We may see specimens of minerals, soils, plants, animals, wild and domestic, races of men, their dress, their houses, something of their family life and vocations, the products of their industries, their modes of travel, their science and art.

Suppose we have studied the map, located the buildings, and taken a ride around on the intramural electric railway, and sought to familiarize our eyes with the grounds and the exterior of the buildings. What a transformation of the lagoons and sand banks of a few years ago. Whatever the management may have lacked, they had the sense to employ the best skill in landscape architecture and responsive skill in the erection of the buildings, and the result is a white city, to be while it lasts the marvel of the world and when it disappears an inspiring memory as long as the idea of its combination of land and water, of surface and form and ornamentation abide in human thought.

We shall not fail to understand that we have undertaken a most serious task, when we learn that the exhibits inviting our study fill buildings with a floor space of 210 acres. If we undertake our educational study on an ordinary day, we find ourselves in the midst of a moving tide of people of all ages and all conditions of intelligence, but uniformly bearing the marks of freedom and comfort, a good-natured, eager, orderly crowd, embodying for the educator more suggestive thoughts than all else around. We can neither mingle in the throng nor look upon it without being filled with meditations upon the deepest educational problems and the effects of their solutions upon man's destiny. These are the people that have made the Fair possible, nay, they have made it what it is, and they have come here to gather its fruits—to determine what its educative force shall be for this and coming generations; and these people are the workmanship of the Almighty and education. In them we may study the work of the teacher as nowhere else. If the date on which we approach the educational exhibit is Chicago day, then our thoughts can find no adequate expression. Seven hundred and fifty thousand men, women, and children brought together in so few hours in so limited a space for such an object. There was never a parallel. Have we ever given up our souls to the influence of the mighty forces of nature—the influence of the boundless forest, the measureless prairie, the torrent of Niagara, or the fathomless ocean? Here in this presence not only a mighty material mass lays upon us a resistless, unutterable power, but we feel that there is in it a spirit with a destiny above it—a spirit to abide when all else that is visible disappears, to triumph over the wreck of worlds, godlike in its possibilities and godward in its aspirations, which it is our duty to promote. For this purpose we are teachers.

Leaving the grounds that evening, my route lead me by the model Sunday-school house, located on the side of the street opposite the grounds of the Fair, in which Mr. Moody, or some of his assistants, held evening services. On entering I found a large and attentive worshipping assembly, in spite of the tide that had brought the multitudes together within the exhibition as waters rush into an irresistible whirlpool. Here, I said, is a lesson in the power of religion in American education, and not unlike that other manifestation of that religious sentiment which surprised so many by rejecting Sunday opening.

Before leaving this thought of the effect of education upon the multitudes of visitors, you will pardon me in giving this personal testimony, that, in my duties about the Fair, from the middle of July until the end of November, I never saw a case of disorder or a drunken person on the grounds, and I may add that officials reported that the total number of arrests during the progress of the Exposition did not reach 150. Although all I am saying is about the Exposition and education, we are after something more specifically educational. Where shall we look for it? Where shall we find the exhibit of the vocation of education in which so large numbers are engaged all over the world in every civilized land, in whose hands are not the materials or machinery of mineral, agricultural, or manufactured products, but the children—the real, veritable children being taught throughout the world—and through whose hands, as clay in the hands of the potter, all these have been taught, whose acquirements are now triumphant in the exhibits of enterprise, patience, skill, and art installed around us? Where shall we find the exhibit of this the teachers' vocation—the conditions, appliances, results of this vocation, so central and causative to all other human callings and activities? Already we have found our way through the Administration Building. Before us is the grand plaza, the court of nations, the statue of Columbus and of the Republic, the marvelous fountains—beautiful, wonderful. But there are no educational exhibits here. Looking to the left, to the entrance of that great building, we see a statue of a man of marked intelligence and aspirations; perhaps he was a schoolmaster, but we see a kite in his hand, and know it is Franklin. He is just calling lightning from heaven, and around him are other names pointing to the scientific results of educa-



tion. This great building is devoted to electricity. What a story it tells of the progress of half a generation! What have the teachers of electricity accomplished?—but there is no room for them here. We must hunt their place. They will be given at least a corner, or a tent, or a tree, as were teachers with their contrabands. If there is any teaching actually on exhibition, if there are any live illustrations, we are ready to hunt them. We will call a Columbian guard, who knows and will tell where everything is. Yes, we will find kindergarten in operation in the Illinois Building and in the Children's Building, and there, too, we may study the crèche or day nursery and Miss Huntington's kitchen garden in full operation. Also, the instruction in sloyd, aided by Mrs. Shaw; and in another room that triumph of patience and pedagogical skill, Miss McGowan's school for teaching deaf mutes to speak in infancy, or that of Miss Garret, of Philadelphia, now supported by the State of Pennsylvania. Yes, here too lively boys are practising in a gymnasium. Then, tramping down near Krupp's guns, we may inspect a swimming school, and over the way, in a Government building, an Indian school in actual operation. After another long tramp, we find, near the Swedish pavilion, the Ling system of physical culture. We want healthy bodies for our people, and yet we can hardly delay to hear that in this system the movements, in their nature and their number, are founded on the human organisms' natural means of exercise, and the possibility of its perfect development to health and capability of work. Gymnastics can also preserve a development already gained. The aim of these gymnastics is to obtain as perfect health as possible; that is, a harmony between the different organs and their functions. Skillfulness, that is, lifting a given weight or the like, has but a secondary place, but it is obvious that the human body will best receive the harmonious development for which it is fitted when the organism itself is used in its own perfection in relation to physiological laws. On this principle the exercises are grouped and classified. Ling believed that he could discriminate 11,000 separate muscular movements. He believed that health was promoted by their exercise, and said if the person is too feeble, or the will is unable to direct the exercise, then the production of that exercise or motion by another person, or by machinery, will promote health or perhaps prevent disease, and hence comes massage.

We can not pause further to study the several systems of physical culture that challenge our attention. Perhaps now we will take a turn in Midway. Here in the Irish Village and in Donegal Castle we may examine the much-needed application of instruction to the improvement of Irish industries. In the school in the Streets of Cairo the pupils are seated on the floor, after the oriental fashion, and studying aloud. If we choose, before leaving Midway we may compare the influence of training upon wild animals, such as the lion and ostrich. Perhaps this is the hour to cross the grounds and witness the training in the Life-Saving Service; or under the War Department, the instruction in making firearms, or in signaling by the use of the balloon, or of the sunlight, that flashes its messages to the distance of 100 miles. Now it may be the hour for lunch, and we will hasten to the Rumford Kitchen and take a lesson in Mrs. Richards's scientific cookery, and before leaving this section we will listen to the attempt to establish instruction in road building, and witness Professor Hazen's efforts to train engineers in the destruction of sewage or of the waste of cities, which is so consummately conducted for the benefit of the health of all visitors at the Fair. Already we have notes of numerous instructive lectures by eminent experts on manifold industries and arts represented, but we can only give them attention when we wish to take an hour for rest.

To-day we will examine the Military Academy at West Point as presented by the cadets now in camp. Later we shall have an opportunity to see the living illustration of the work done by Captain Pratt at the Carlisle Indian School, represented by their band of music and 500 of the students; besides, we must find an hour to examine the work done in American business colleges as represented by banking and exchange in actual operation.

We turn from all these live exhibits disappointed that there is so little of what could well be exhibited, but thankful that there is so much, though it is so widely scattered.

We must seize a moment to examine training in fish-culture in the Agricultural Department, or instruction in bacteriology in the laboratory of the Marine-Hospital Service, or the Surgeon-General's Office of the War Department, and when we are ready for a tramp we will go to the Anthropological Building and witness experiments in the psychological laboratory.

Let us now try for the inanimate exhibits. Here there is greater disappointment; space is wanting and system and unity are in a measure destroyed. Nations are omitted and subjects are only partially exhibited. Only about three-fourths of our American States exhibit their public school system—some of these only partially and none completely. But, with all our disappointment, we have never had a better opportunity to study education. Any one at any time may examine its statistics, history, and literature in the United States Bureau of Education as nowhere else in the world, but here are illustrations of buildings, specimens of appliances, and collections of students' work and a variety of data never before offered for examination. Altogether it suggests forcibly what adequate space and generous treatment of education might have accomplished. We shall have no lack of tramping. We must go to the Anthropological Building for reformatory education and instruction in sanitation, then to the building of the French colonies for their school work. Far apart in the Agricultural Building we shall find the school exhibit of Uruguay, and what there is from Liberia, and that remarkable exhibit from the greatest of English experimental farms, and from our own colleges of agriculture. In the Swedish pavilion we can take note of the Lundin system of sloyd for girls—the measuring, cutting, and making of garments in Sweden—and in another hall or alcove the work of the Nääs school. Here there is a most instructive study of the abnormal positions of workers in wood and metal, contrasted with those positions which after careful investigation are found to be best adapted to health.

We shall want to take time for the exhibit of the Bureau of Education in the United States Government Building. Here a young gentleman and lady will make ample explanations, but the limited space is packed. Here are statistics, history, literature, and articles illustrative of conditions of education that can only be mastered in time.

In the Woman's Building we have a considerable space given to the representation of institutions devoted to woman's education, academic, professional, and industrial; and in the educational section a rare collective exhibit of schools for nurses, and from Germany some specially successful girls' industrial schools and specimens and studies in the development of woman's industrial work, going back to the Middle Ages. From Spain comes the work of schools for the defective classes, under the patronage of women. Before leaving this building we must not fail to take into account woman's work in libraries, in literature and science, as well as instruction in art. When not too weary, we can take a run to the State buildings of Washington, California, and Illinois, and learn the story of their education from their school exhibits. Kansas and California we shall find divided between their State buildings and the educational section of the Liberal Arts Building.

Here we are at last with a great body of educational exhibits before us, and yet here the Argentine Republic is crowded into a distant alcove and only partly unpacked, and that from Japan must be found in three widely separate localities; France can only set up part of its exhibit, and yet a portion of that, illustrating industrial work in Paris, must go to its pavilion; Germany, with its rich display, to treat it with any justice, must erect another story over the floor space assigned it.

It is doubtful whether many of us would agree upon the same plan of investigation. One would proceed by subdivision, taking first, the foreign; second, the American public school and advanced work; third, Catholic schools; fourth, educa-



tion of defective classes; fifth, business colleges; sixth, Indian education; seventh education as promoted by voluntary associations, such as the Israelite Alliance, or the Temperance Union; eighth, as illustrated by business enterprises such as those which furnish the text-books, represented by various publishers, or furniture, represented by manufacturers, or apparatus, or illustrations, such as represented by Ward, of Rochester, or Queen & Co., of Philadelphia, or Milton Bradley, of Springfield, Mass., or Steiger, of New York, or buildings as represented by different firms of architects. Another may choose to make the teacher, his preparation and methods, the center and beginning of his thought. Another may take up the work by grades. One would begin with the kindergarten and go upward; another with the professional school and go downward; another may choose to trace ideas and their development in the history of education. Perhaps he finds the germ, or seed-thought, of a movement in the mind of some philanthropic educator and traces it through its periods of quiet and agitation until realized in legislation and the administration of systems or the adoption of principles or methods or the establishment of institutions. Another may prefer to begin with the enactment of law and trace its operations in schools and its results in the customs and industries of the people. Another would prefer to spend time in tracing the development of methods and principles, systems and institutions, in different nations and races, the influence upon education of a nation such as Prussia, or of individuals such as Socrates, or Quintilian, or Comenius, or Bacon, or Rousseau, or Pestalozzi, or Froebel, or Horace Mann, or Barnes, or Sears, or Henry Barnard, or of the distinctive schools of thought or of philosophy. Whatever course we pursue, we must never part with the historic and comparative method, two most essential conditions of the best results, alike for teacher, pupil, and investigator. Before us are myriads of pictures, acres of drawings, tons of written work, and car loads of specimens of manual training. We can only hint at possibilities. The devices used are many and helpful. Here a State tells its statistics on a rotating cylinder; graphics are extensively used both in foreign and American exhibits, especially maps, notably by New York, Michigan, and Massachusetts. Raised maps are numerous and effective. Denver sends a shorthand report of actual daily work in the schoolroom. New Jersey has a special device for packing and showing pictures. In several instances the phonograph repeats the actual work of classes in reading and music or the lessons of the teacher, and the cunning of the instantaneous photograph is beyond measure. Fortunately there is a generous amount of explanatory literature which is freely distributed. For many exhibits gentlemen and ladies are present ready to answer any questions. Did you ever go to the Catholic exhibit without finding either Brother Maurelian or some of his numerous assistants? In New York you can have explanations in French. In the exhibit of deaf-mute instruction many find added interest in the fact that the attendant is a graduate of the deaf-mute college and is such a master of articulation that he can communicate with you with ease. Connected with Carlisle and Hampton exhibits you will meet the Indians they have trained. In Massachusetts you are sure at any time to find four, if not five, persons in attendance; for the Institute of Technology, an alumnus; for Harvard, Professor Cummings and his wife will speak in any language you desire, and for the public schools Miss McDonald and Professor Gay will be acknowledged models of tireless courtesy and patience.

We are fortunate if we study the French exhibit during the visit of Mr. B. Buisson, and have the benefit of his explicit explanations. In mastering the large and effective German exhibit, we may have the historical and philosophical explanations of the eminent Dr. Stephan Waetzoldt, professor of the University of Berlin, and chief commissioner of the Prussian ministry for education. Those who are familiar with the indebtedness of American education to Prussia, the eminent masters furnished to our schools, and the valuable information we have derived from the system—principles and methods from the reports of Stowe, Mann, Bache, and Barnard on Prussian education—will examine the Prussian exhibit with peculiar interest.



Furniture and text-books, so easily exhibited, are not so fully represented as might be expected, either from our own or from other countries. If the German text-books are admitted to bear more marks of systematic and patient labor, and the French of a severer logic and a more exquisite æsthetic taste, American text-books clearly have no superiors in the matter of print, pictorial illustrations, and other characteristics of mechanical execution. In the German exhibition there is an ingenious combination in a teacher's desk. It has the usual conveniences for the teacher's eye and the material for his use, but it has also an arrangement connected with its back by which he may present to the eye of the class letters, words, figures, sentences, or other illustrations which he wishes to use in his lessons.

Educational journalism, both American and foreign, is present only in limited extent.

Of the exhibition generally, it may be said that representations are limited almost entirely to present conditions; grounds, architecture, appliances as they now are, the work of students at a single sitting or on a given day, or completed specimens. Colorado, however, offers the model of the first district schoolhouse. Princeton, a picture of the log college, a model of the grounds and Nassau Hall, and other characteristics. Dr. Harris, in the exhibit of the Bureau of Education, presents in miniature models instructive studies in the development of desks and seats; Illinois shows a process of producing stereotyped plates for the blind, reducing the cost per page from 75 cents to 15 cents. France shows with effect the progress of a pupil through a series of years. Nearly forty years ago a plan was attempted in Toledo for carrying out the comparison of one year's result with another during the attendance of pupils and classes. Progress in text-books may be studied in the collection exhibited by Prof. Jerome Allen or that of Mr. Plympton; in the latter we may find specimens in arithmetic, algebra, in English, French, German, and Latin and Greek—going back to and including the New England Primer and the horn book, now so rare to find and so difficult to secure.

In the literature and statistics of education there is more opportunity for historic comparison. Sets of the New England Journal of Education recall the fact to the credit of Dr. Bicknell, that, in its establishment, he led the way for educational journalism out of subjection to subsidies and limitation to state or specially local circulation into effective independence and national circulation, and the constant draft upon information of the progress of education the world over. If we seek the best known data on education, from the earliest time to the present, we shall find it in great abundance in the full series of volumes found both in the exhibits of Mr. Bardeen and the State of Connecticut, and of the American Journal of Education, on which Dr. Henry Barnard has expended his fortune and the eminent services of his long and useful life. Further historic studies may be made in series of reports presented here and there, notably those from Connecticut, Boston, the State of Massachusetts, and the Bureau of Education; and those most effective graphic statistics of Harvard, in which you may trace the descent of education by families, or the increase of its funds or its attendance, or the influence of a single gift to its library, or of a fund for establishing a separate professorship; or in the exhibit by Princeton of the rude apparatus used by Henry in establishing the laws of electrical action; or in the New York collection, the apparatus used by Draper in his work in photography.

The organization of education is a study in itself. In the exhibit the demarcations are easily recognizable. In foreign countries such as Japan, Russia, Austria, Sweden, and France, the authority proceeds from a national source. So for England, Scotland, Wales, and Ireland, but for the colonies it is colonial. For our country and Germany there is not a national system, but education is a function of the respective States.

The Catholic exhibit is divided into archdioceses and dioceses; the schools and colleges under the respective orders, brotherhoods, and sisterhoods, in which each teacher obeys the command of the superior with the fidelity of a soldier.

Among our American States, while to a casual observer there may seem to be exact similarity, there is really great diversity. From colonial times there has been legislation with regard to education, but the growth of supervision by civil authority above that of the local civil unit, such as the town in Massachusetts, is of recent date. Knowledge of the condition of the education of children, or the intelligence of its people, was not what the State concerned itself about. The importance of this item of information slowly dawned upon the minds of statesmen. They cared most to know how many fighting men there were, and then about property as a basis of revenue. After a time one after another of the earlier States began to require reports of the children of school age, of school revenues, and school attendance.

New York first required supervision, then abolished it, then returned to it; and in the exhibition there is disclosed a bifurcated system of State administration of education, one under the board of regents through its secretary and the other under the State superintendent of public instruction. The State University under the board of regents is an old organization; all institutions of education desiring a charter apply to it and report to it. The State library and museum, university extension, and university examinations are under its direction. Under the State superintendent of public instruction are the public schools of the State, the normal schools and teachers' institutes. All appeals from local administration under the law go to him. Under him there is a system of local supervision by commissioners. Cities have a self-directed administration and supervision in accordance with the general and specific laws enacted by the State to which they are subject. For a knowledge of the education in the State we need the reports of cities and those of the board of regents and of the State superintendent.

In Massachusetts the State administration of education is committed to a non-partisan board nominated by the governor, and confirmed by the council, whose secretary is their executive officer. The great revival of education in 1837 under Horace Mann may be said to have been begun when he became secretary of this board. In the report of the secretary, or the State's report of education, you find nothing about the colleges or the universities. It confines itself to the public schools, the normal schools, and certain academies, and school for the blind, deaf, and feeble minded. The authority of the board is extremely limited. Associated with the secretary and cooperating with him is a group of expert lecturers, who together with him address meetings, visit schools and hold conferences with teachers and school officers. Towns and cities, as provided by the statutes of the State, levy their school taxes and administer their school affairs. Boston early elected as its first superintendent Nathan Bishop, who soon retired when John D. Philbrick was chosen as his successor, under whom the Boston schools rose to their supreme efficiency as regarded by the educators of the world at that date.

In Pennsylvania the authority is centralized in a State superintendent of public instruction; local supervision is by cities and counties, yet there is no State university, the nearest approach to it being the college of agriculture and mechanic arts.

The organization in Ohio corresponds with neither of the States already described. This also appears distinctively in its exhibit, which is made by the cities of Cincinnati, Cleveland, and Columbus, and several of the counties by their own action respectively. The college of agriculture is becoming a State university, and there is lack of county supervision and no State normal school.

In Michigan the exhibit discloses the lack of executive power in the State school office as in Ohio, but reveals a closer relation of the several parts of the system. Here is a great State university, which was the first in the Union to bring high schools into close relation with it.

In Minnesota, the exhibit shows the close relation of all parts of the public school question, the elementary to the secondary or high schools, and these to the university and the normal schools.



If we take up method and attempt investigation, we shall perhaps begin with the mother tongue. Here we find it in the songs and common language of the kindergarten. Nowhere do we hear the old a-b ab and b-a ba of other days. Everywhere there are improved methods. Great emphasis is placed on language lessons in the most efficient systems, whether foreign or American. Selections are furnished from the best authors, sometimes committed to memory, sometimes copied from dictation; original compositions are required. In the last twenty years instruction in English in different parts of the United States has been entirely revolutionized.

The different methods are made manifest in the varied exhibits. The diversity is hardly less marked in the methods of teaching writing. Some begin at once with both pen and pencil, as in Kansas City; others begin with the pencil and later introduce the pen, as in Boston. Some contend for the upright lines for writing, like England and Canada and different schools in the United States; and others for slant lines, like Germany and many of our own cities and schools. Here, too, is every method for teaching arithmetic and geography. Generally speaking, in all subjects, from the lowest to the highest, there is manifest improvement; even text-books from Turkey are modeled on the best from America. Schools of Egypt exhibit the Koran as the book for sacred reading, and show work in manual training and letters in accord with the methods prevalent in Europe and America. Behind the exhibit from Germany there are the same well-known enforced attendance of pupils and universal training of teachers for their professions; more dependence upon the teacher and less dependence upon the text-book. Generally the work in Germany and France is characterized by systematic illustration in the lower grades. In the United States there is abundant evidence that in these grades the abstract method is giving way to the concrete. This is especially true in teaching language. The improvements in teaching English are most marked.

In the lack of authoritative co-relation of parts or grades of educational work in the United States it is gratifying to see each grade by its own intelligent action seeking to come into appropriate sympathetic cooperative relations with every other. In our individualism, in which there is such untold advantage in our standing apart from each other, it is well to remember that we sometimes stand more than erect. We may lean backward. The colleges have too long been responsible for the lack of improved methods in teaching, especially for abstract methods in our primary schools. Movements like that of Cambridge, in which Harvard University seeks to elevate, render philosophical and more nicely adapted to age and environment the instruction in elementary subjects, are full of promise. The several exhibits furnish a rich opportunity to study the facts behind the great piece of work done by the distinguished committee of ten.

Everywhere in the American exhibit there is gratifying evidence of increasing thoughtfulness, especially of increased accentuation of the importance of improving the qualification of teachers. Examinations in knowledge of methods are more careful. The normal schools are yielding up more and more the work done in academic instruction, and increasing their efforts in pedagogical training. Colleges are adding chairs with one designation and another in the theory or history and practice of education. The *sui generis* exhibit of the Cook County Normal School was much studied in the children's building. The Oswego Normal School, that has done so much to bring the principles and methods of Pestalozzi to America, manifestly took the lead among the normal school exhibit of New York.

But individual exhibits must be left to personal examination, nor will time permit any estimate of the schools of engineering or technology. It has been remarked that the exhibition of the Boston Institute of Technology is so complete and typical that, were the institution destroyed, its main features could be reproduced from the suggestions of the exhibit; here, too, is the solid work of the institution at Troy, dating back to 1826, pointing to the Ferris Wheel, the Brooklyn Bridge, and other



triumphs of its graduates as evidences of its merits. Nor can we pause to linger around the colleges and universities. In these grades of work we are deeply impressed with the magnificent equipment and thoroughness of university instruction in Germany.

What the exhibition was to foreign educators we must not attempt to describe. They specially took in, in connection with the exhibit, what they could see elsewhere in the country, and especially in Chicago. Everywhere they felt the absence of the union of church and state, and the absence of militarism, demanding, as on the Continent, a portion of all young and vigorous life, and an absence, too, of the surrender of the masses to the classes. The number of eminent foreigners who visited us was very large. We shall find much in their reports to instruct us. Already Compayré has expressed his surprise at the rapid growth of our universities and their rich endowment from private sources; and Jules Steeg has declared that a part of this portion of our exhibit seemed to him childish. Dr. Waetzoldt reports favorably upon our improvements in methods of elementary instruction, especially in teaching language.

Taking the exhibit of education in connection with other portions of the Exposition, one can not fail to be impressed with the power of education in saving nations from disorder, and imparting to them conditions of national progress. Here we may catch hints of evidence that England avoided a foreshadowed revolution by aiding industrial and technical education and establishing a system of elementary schools; that France in recent years, by an almost superhuman effort, in advancing education among the people, has avoided anarchy, and confirmed an orderly republic; that Japan by a wise use of education sprung from her seclusion to the front rank among nations. We are made to feel the power and unity of education for every member of every race, no matter what his characteristics. It means alike for the lowest and the highest of every type an enlargement of the boundaries of knowledge, a training of all the faculties and powers to improved activities, quickening the reason, confirming the conscience, and aligning the decisions of every one more and more with reason and right. In the provisions for reading beyond the school period, we see evidence that France in its recent efforts, and parts of the United States, have outstripped other portions of the world. No community of similar territory, with equal population, excels Massachusetts in this important means of assuring progress of intelligence among the people. Her libraries bring a supply of reading matter within the reach of over 97 per cent of her people. In the exhibit of the Bureau of Education, by the cooperation of the American Library Association, we may see a model library and its administration, learn about schools for librarians, and look up the library question in all its bearings.

There is general surprise expressed at the great progress of kindergarten and manual training in the last twenty years in the United States. Whether our stay with the exhibit of education is longer or shorter, we shall leave with the opinion that it was well to make it; well for schools to prepare for it; well to furnish opportunities to study its principles, methods, and results. For myself, it will be remembered by some, when by invitation we discussed the methods of preparation for the exhibit, that my experience pointed to the best results in the United States by moving under the auspices of the National Bureau of Education. This is our national agency, equally available for all States, localities, institutions, and interests. And now at the close of the exhibition you will allow me to say that these opinions are most fully confirmed.

What the disseminating power of the Fair is to be, no one can fully foresee. It is clear, however, that it will be determined largely by yourselves and those like you who are appointed to extend their influence into the future by educative processes, whether by the arts, or trades, or by speech, or by the press, or the more formal processes of direct instruction of youthful minds. How much of this great respon-

sibility falls to you was incidentally pointed out in the poetic language of the "Autocrat of the Breakfast Table" at your last meeting:

"Teacher of teachers! Yours the task,  
Noblest that noble minds can ask,  
High up Ionia's marmorous mount,  
To watch, to guard the sacred fount  
That fills the stream below;  
To guide the hurrying flood that fills  
A thousand silvery rippling rills  
In ever-widening flow."

Any visitor to the Fair will often think of Victor Hugo's declaration that the nineteenth century is woman's century, and then he will confess, too, that it is the workingman's century, and then that it is the child's century, that its great movement is toward a clearer definition and realization of man's essentials and of his relation as child, as man, as woman, to his Creator, and that thus it is promoting the removal of artificial burdens and obstructions and making the course clearer for man's mastery over nature, and for his triumphant progress in the destiny divinely offered him.

### THE EDUCATIONAL EXHIBIT AT THE WORLD'S COLUMBIAN EXPOSITION.

By SELIM H. PEABODY, LL. D.,

Chief of Department of Liberal Arts, World's Columbian Exposition.

The world has never before seen an exhibit of its educational results so extensive or so complete as that shown at the Columbian Exposition.

Twenty-six foreign nations contributed to the educational exhibit. The principal were Germany, France, England, Canada, New South Wales, Russia, Mexico, Brazil, and Japan.

Thirty-two States sent collective exhibits. Forty-four were in some way represented. Illinois and California were compelled by the conditions of their State appropriations to make their exhibits in their own State buildings. We greatly regretted their absence, as well as the defection of the agricultural colleges. Above all should we have rejoiced if the Bureau of Education could have occupied an appropriate and significant space as the central figure of all American education.

Contributions to the American exhibits came from 1,150 cities and towns, 271 counties, 756 academies and private schools, 53 schools for the defective classes, 25 business colleges, 39 manual training schools, 20 art schools, 51 normal schools, and 146 universities and colleges.

Among the foreign exhibits that of first importance came from the German Empire. It was prepared by the minister of education under the sanction of the imperial council. It illustrated, first of all, the admirable organization by which that Government manages its educational affairs. The department of education having an organization as complete as that which has made the German army famous, the minister proceeded to call for such items as he was pleased to select from the faculties of universities, the directors of schools of arts and sciences, the principal officers of gymnasia, realschulen, and primary schools, for material illustrative of their various departments. The most distinguished professors and scientists answered with the actual apparatus used in their latest discoveries, contrasted with others of historic fame. They sent huge folios containing the plans and elevations of their latest achievements in buildings for laboratories, art galleries, and museums; models to scale of schoolrooms and furnishings; complete sets of the apparatus furnished to their primary schools and gymnasia, for the teaching of the physical sciences; diagrams and charts presenting in a few salient points the most impressive educational facts of the Empire; histories in many volumes of their great institutions of learning; immense folios of examination papers, some taken recently, some in the early years of the century.

Nothing short of a complete catalogue will enable one to understand the fullness, the richness, and the dignity of this wonderful exhibit. The interest in it is not diminished when we learn that it was gathered at Berlin within two months after orders were given for its collection.

One of its charts told an impressive story. An account in the nature of debits and credits, kept with the Kingdom of Prussia, showed on one side the census of children of school age to the number of more than 5,000,000 souls; upon the other side there were so many accounted for in each department, so many excused for cause, so many sick, all save less than 1,000, whom the truant officers had not found.

The American educator who gave to this exhibit, or to any specialty therein, earnest and thoughtful study, could not fail to derive information and inspiration of the highest value. He would also observe the general absence of two sorts of exhibits which were so much in evidence in the American section—those of shop training and the kindergarten. The sacrifices made to give this exhibit space were surely repaid a thousand times.

The French commission presented the most elaborate display of advanced engineering shopwork shown in the Fair, some good elementary art work, a full collection of the literature of the ministry of education, and an excellent exhibit from the public schools of the city of Paris.

As had been expected, the Russian exhibit was quite complete and full of interest. Those who remembered the impetus given to shop instruction in America by the Russian exhibit at the Centennial, and were anxious to see what further development in this direction that country had to show, were somewhat disappointed. The exhibits which had attracted so much attention in 1876 were repeated in 1893, but not improved; they were equaled, if not surpassed, by many similar exhibits in the American section. The most valuable contribution from Russia was the exhibit of girls' handiwork, brought from the charitable institutions under the patronage of the women of the imperial family, and consisting of plain and ornamental needlework and embroidery. The art instruction from Russia was also a subject of special interest.

Forty years ago American ships were knocking at the sealed gates of the Japanese Empire. Twenty-five years ago that Empire sent to various Western countries 700 chosen youths to be educated at the public expense. Last year her accredited judges were reporting awards upon American school exhibits. This Exposition is the first to which she has sent any educational harvest. Here she showed exhibits from a state university, well equipped; from a school of technology, whose president was a very able commissioner of her exhibit; from a normal school and an agricultural college. By the aid of these schools she is developing her educational system, in which she already shows excellent results in primary instruction, and in the lines of practical science, manual training, and natural history. She is proceeding in a logical method, and is rapidly filling up all the gaps between her primary and her higher schools.

An exhibit of much interest came from Egypt, from Cairo, and neighboring towns. It consisted of manual work in iron and wood, the latter elegantly inlaid in the Arabic manner; physical apparatus made by pupils; drawing, in variety, well executed; writing in English and Arabic, with inscriptions emblazoned from the Koran, etc. Most of this work compared favorably with that done in our best schools, and some could not there be paralleled. Thus is the *ὑποκατάσῃσις* complete. Science and education return in full circuit to their birthplace by the tombs of the Pharaohs.

The State collective exhibits were notable for their general excellence and for their infinite variety. Thirty-two States could not provide exhibits which would cover interests so similar, without a degree of sameness, but the predicated barren iteration did not appear. In almost every case the inventive genius of the committee in charge worked out some novel and effective feature, as illustrated by the stenographic reports from the schoolroom, suggested by Mr. Gove, of Denver, and



the phonographic tubes from New York and Wisconsin. Probably neither of these devices reveals exactly what it is intended to represent any more than photography does. One has to be urged to "look pleasant" before the camera; and if the voice of the worried and forgetful teacher should become high and strident, the phonograph which omits that episode will be pardoned. Both these devices are ingenious, newly applied, and worthy of repetition.

The chief criticism upon the State exhibits is that too many of them failed to indicate the existence of a well-organized and active system which provides for the wants of the State as a whole. Some of them presented only a series of city exhibits, which were as distinct as beads upon a string. The rural schools were not sufficiently in evidence. It is true that in some cases the State organizers could not arrange their exhibits otherwise; first, because they could not secure funds for their work if done in any other way, but mainly because there was no general organization to be represented. In this respect the contrast between some of our exhibits and that presented by the German nation is very great and is much to our disadvantage.

As to the use of collections of written examination papers, themes, and drawings, the suggestion has been made that they have proved worthless and will never again be made part of an educational exhibit. But those who came as accredited examiners from abroad, like the German commissioners, or the special agents sent by the city of Paris without exception, made more careful studies of these papers than of any other elements of our exhibits. Many requests were made for examples of such papers, to be taken home as additions to pedagogical libraries. It was after reading these papers that Dr. Waetzoldt, the distinguished German commissioner, made the following statement as to the worthy results of American education. He said:

"In teaching language, drawing, and modeling the Americans are superior to the Germans. It is surprising what a command of language the American school children have. German teachers dwell too much upon style and literary models, while American teachers aim to give the children a practical command of the language."

No more notable illustration of the trend of American effort since 1876 appeared than in the exhibits of the kindergarten and the manual training schools. It is not unfair to say that these subjects were more in evidence in the Exposition than was warranted by their existence in the schools. This happened quite naturally. First, because these are among the newest things which have occupied the public mind. Teachers of these specialties were anxious to have the fact known, especially by foreign visitors, who should thus learn that we are abreast of the most advanced movement. Second, nothing which the teacher has to show lends itself to exhibition so kindly as do these products. They are far better than the work of art classes, for they do not include so many ghastly failures.

The archbishops of the Roman Catholic Church in America recognized the opportunity which the Exposition offered them for presenting the kind of education which they would make popular, and their claims for it in comparison with that of the State schools under State supervision. Brother Maurelian deserves congratulation for his very notable success. He used the far reaching organization of his church in securing contributions from 37 States and Territories, 57 dioceses, 412 cities and towns, and about 1,200 schools of all grades from the humblest parish schools to the university at Washington. In a great abundance and variety of material the prominent features were the work of the primary or parish schools, with art and needle, work as taught in the convents and seminaries. So far as prestige is concerned, the public State school has not suffered in the comparison.

The following items will express some of the directions in which our American education has made progress since the last great American Exposition, as illustrated in that which has just closed.

(1) Very marked progress in the development of the university as compared with the college. While only part of our great institutions presented exhibits, these

illustrated the best phases of such work, in a congeries of exhibits whose merits grew upon one during every day of the Fair, and do not suffer now that reality has faded into memory. Post graduate work, the seminary, personal investigation on the part of both professor and pupil, the endowment of research as well as the endowment of instruction, each energizing the other in the development of either the sciences or the humanities—these are some of the flowers and fruit which dignify and elevate our university work.

(2) The development of the university extension and Chautauquan methods.

(3) A large increase in the number of normal schools, and the evidence of power derived from their methods of instruction, diffused through the public schools. This appears to be a most potent factor in the elevation of public school work.

(4) The strong, united, and systematic character of the exhibit of the business colleges. Hitherto these have been deemed a corps of educational free lances, which corralled students, roped and branded them, and sent them through a short cut, called a business education, to the counting house, the ledger, and perhaps a fortune. On the contrary, this body of teachers laid aside their differences, brought together a solid and instructive exhibit, and proved that they give in their own field a worthy and useful training.

(5) The continued establishment and the advanced methods used in teaching the blind; the deaf, especially in oral speech; and the remarkable results secured in elevating the lives of those of feeble minds.

(6) The manual training school has already been noted. Its progress during the last seventeen years has been phenomenal. Thirty-nine distinct manual training schools exhibited, besides schools of technology and collegiate technological departments in which manual instruction is an integral part of every course. The whole exhibit from one end to the other bristled with the work of the tool, from the jackknife to the machine driven by power.

(7) The trade schools in the large cities have developed rapidly. Trade schools teach some kind of work done by the artisan as a means of earning a livelihood; such as the trade of the tinsmith, the plumber, the harness maker, the dressmaker, the milliner, the cook. Excellent exhibits of this character came from New York, Brooklyn, Cincinnati, and from the Indian schools of Hampton and Carlisle. It is to be hoped that these schools will multiply so rapidly that when the walking delegate finds them and attempts to put his foot on them, his foot will not be large enough for the emergency.

(8) The foothold which the kindergarten has acquired as the basis of the best primary instruction.

(9) The progress made in the giving of sound instruction as to the evil use of narcotics and intoxicants.

(10) The development of art schools in so many important centers, and of art instruction in so large a number of the colleges and schools of technology. Much good is to be expected from this movement, especially when it shall have come to permeate all our public school work, and after it has risen above conventionalism, the impressionist vagary, and the influences which flow into it from French channels.

(11) The gradual but steady advancement of public school instruction in all parts of our land. This advancement will necessarily be slow. It is the resultant of a multitude of forces, aiding and opposing each other. It involves the just enlightenment of the whole people, which must be trained to know the purposes of education, the need for it, and the needs of it. I feel confident that the exhibition just closed shows—in the kind of work displayed, in the breadth from which it was drawn, in the earnest feeling in regard to it, in the multitudes that came to study it, in the inspiration that has grown out of it—that the onward march of sound educational ideas in the United States was never so direct, so forceful, and so sure as it is at the present time.



## THE WORLD'S FAIR.

[From the New England Journal of Education.]

There is nothing more important in the school work of 1893-94 than the utilizing of the knowledge and spirit of the Columbian Exposition. It has been instructive and inspiring, enlightening and ennobling, a revelation in science and a revolution in the arts.

Geography has its highest aim and noblest purpose when it deals with what men have done with the earth, and upon it, rather than with the earth as it was and is and would be untouched by man's art and skill.

History has its highest significance when it is used as the base line from which to take measurements and angles into the social, industrial, and political future. History faces forward. It is a fountain and not a crystal, a stream, not a pool. Out of a limited past it gives those lessons for which a limitless future hungers. Science teaching is not for the purpose of knowing certain laws and principles that have been authoritatively recorded, nor is it to know how the teachers and books have been accustomed to present certain labeled facts, but it is rather a prophecy, a foreseeing of what will be, or at least may be developed out of or revealed from what is known and knowable of the laws and principles of science.

The Columbian Exposition has taught more geography that is valuable by means that are rarest and methods that are choicest than aught else ever conceived by the mind of man. It has been a fathomless revelation of what man has done with the earth and its resources in different localities and under varying conditions of soil, climate, and government. With its record of progress, of the acceleration of a progressive spirit with some peoples and of the retarding of progress by others, with its revelations of the tendencies as seen in the results of different conditions of race and government it has furnished invaluable facts for the student of history. With its matchless exhibit of the discoveries and inventions in the arts and sciences it is a vivid panorama of the conquests of man over the forces of nature; of his mastery of sun and shadow, of light and heat, of soil and climate, of steam and electricity; of his skillful unlocking of the earth for oil and gas; of his tandem electrical team of telegraphy and telephony; of his harnessing the air waves in phonography; of his marvelous skill in training the sunlight in the photography of things in the earth beneath and in the heavens above by day or by night. Through this it has presented material for the study or teaching of science such as has never been known before.

With its vivid record of the revolution in the means of transportation by sea and land, by steed and steam, it has offered unparalleled advantages for the study of commerce, while the highest arts in painting and sculpture, in decoration and adornment, in landscape gardening and architecture, in the electrical and pyrotechnic illuminations of the fountains and of the heavens, has placed America in her four hundredth year above and beyond all other nations in her attainments as well as in her record thereof.

All this should be utilized so far as it may be through reports and descriptions official, reportorial, and literary. The teachers should begin early to equip themselves for the best possible use of all this material.

## WHAT THE EDUCATIONAL EXHIBIT SHOWS.

[From the New England Journal of Education.]

The educational exhibit at the World's Fair is the largest and most complete portrayal of educational facilities and results ever made. Nearly every State in the Union and many foreign countries show in a complete and satisfactory manner the organization, method of instruction, and results obtained in this department of statesmanship. The preparation of the material has taken much time and care, its installation has involved a great amount of labor, its superintendence requires the time and strength of many people.



The results fully justify the expense involved, and from every point of view are gratifying to those who have been interested in the work. It is the purpose of this paper to point out a few of the lessons which the display is teaching.

(1) The first lesson is that the present is a time of high ideals. The work shown is often far from perfection, but the most of it is in the line of excellence. Time, effort, proper facilities, cooperation will make the ideal real.

(2) The second lesson is that good work is confined to no one section of the country. From Maine to Washington teachers exhibit purposes, methods, and principles that are of the highest rank and importance, and pupils send work in which they may well take pride.

(3) The third lesson is that no one city or State has wholly good school work, and that, while all have some excellencies, all have defects that need remedy. Maine may learn from California, Kansas may learn from Connecticut, Massachusetts may learn from Missouri.

(4) The fourth lesson is that there is no need to raise the question what school children can do; it is sufficiently proved that they can do anything they are likely to be asked to do. The real question is, What things can we wisely ask children to do and in what order? Here are drawing, sewing, geometry, writing, English composition, botany, mineralogy, zoology from pupils of 10 years of age—work that would be regarded as creditable from pupils of 16 or 17.

(5) The fifth lesson, not the least important, is that an exhibition of this character has great educational value and interest. The carefully prepared courses of study, the schemes of work in every branch of learning, the methods of teaching employed by the thousands of teachers throughout the land, the illustrations of school exercises from the hands of the pupils have high educational value.

## EDUCATIONAL EXHIBITS AT THE COLUMBIAN EXPOSITION.

By RICHARD WATERMAN, Jr., in *Educational Review*.

I. The educational exhibits at the Columbian Exposition have been inspected and studied and discussed by thousands of people during the past five months. They present such a wealth of material to illustrate every side of the educational problem that no visitor, whatever his previous training or present occupation, can fail to find some point of contact. One sees not only school-teachers and students of education, but farmers, mechanics, merchants, and professional men studying them closely.

Naturally the work of the new education, which aims to produce tangible results and to educate through a process of learning by doing, is far easier to represent than the older academic work. The average World's Fair visitor passes by an exhibit of routine common school work, because it is not showy, and stops at exhibits of shop work, of decorative design, or of some other subject in which tangible results have been secured. He likes to find evidences that education prepares pupils for their life work, and enables them to reach a higher place in the industrial order than they could otherwise attain. He is likely, however, to judge exhibits of this character by an absolute standard, making finish and accuracy the tests, and ignoring the fundamental ideas of manual training—that it is a discipline of the mind through the hand, and that the strength of the reflex influence, and not the value of material products, is really the measure of success.

Another class of visitors, much smaller in number than the first, is attracted by something more than superficial excellence. Having a general knowledge of the work, they take an intelligent interest in it and are ready to examine all of the exhibits with some care, in order to keep abreast of educational progress.

The third, and by far the most important, class of visitors to this section is composed of teachers and professional educators. Never before have the teachers in this country had such an opportunity to study a large and representative collection. Most of them have been so tied down to work in a narrow field that they do not

know what other schools are doing. They gather at the Fair a great deal of valuable information which gives them new power to teach successfully.

The educational section is, however, but one of many interesting features of the Fair, and can claim only a small part of the time of the average visitor. It is, therefore, necessary for persons interested in education to depend mainly on published reports for their knowledge of the section devoted to that subject. The great importance of educational work has led newspapers and magazines in all parts of the country to devote considerable space to descriptions of the exhibits; but most of the articles have merely described and have made no attempt to compare or interpret. It is, therefore, desirable that there should be a complete record of the contents of the educational section, together with a comparative study of its most important features. Fortunately the Exposition authorities have provided such a record and comparison by appointing competent experts from all parts of the world to judge the educational exhibits and award medals and prizes for the best. Their report will form a permanent record of the present condition of education, as far as it is shown by the Exposition, and should prove very suggestive and helpful to teachers everywhere.

Since the work of describing individual exhibits and of recording the contents of the educational section, as a whole, will be so fully done by others, the writer of the present series of articles will not attempt to do either of these thoroughly, but will simply note a few of the salient features of educational work as shown by the exhibits. He will deal broadly with schools of every sort, from the kindergarten to the university, without attempting to enter into details or even touch upon those parts of school work whose exhibits would require a minute expert examination.

After discussing such general topics as classification and arrangement, methods of installation, and the kind of exhibits shown by different schools, he will describe a few typical exhibits from the fields of higher education, of public education, and of industrial, technical, and special education.

The official classification of exhibits is very comprehensive and forms the basis on which awards will be made by the judges. It is well adapted to this purpose, but does not furnish a working plan that could be followed by school men in preparing exhibits.

The Exposition authorities did not intend that it should be used in that way, but preferred that each exhibitor should be left free to prepare and arrange his exhibit in his own way, providing he should conform to a few general regulations.

The result of this policy is a display that has many original features, and represents admirably a great variety of schools, but lacks the one characteristic that would be most helpful to the student of education—a degree of uniformity. Each foreign nation, each of the United States, and each chartered or private institution forms an independent unit. One groups the exhibits according to subjects of study, another according to school grades, and a third on geographical lines. Some show the best work they have done during the current year, and others during a series of years. Some send a few papers from a large number of schools, and others a large number of papers from a few schools. Some aim to give a symmetrical view of the work actually done by pupils, others of the work that ought to be done by pupils; and still others make no attempt at symmetry, but show whatever will attract the eye, even if it has little or no educational significance. Some display regular school work, and others work prepared for the occasion.

Even these confusing differences might not annoy the student seriously if he could recognize them on sight, but this he can not always do. He sees an exhibit that pleases him, and he wants to know what it represents; what is the age and sex of pupils and their previous preparation; the position of the subject in the complete course of study; the conditions under which the exhibit was prepared; the amount of assistance given by the teacher; the degree to which the exhibit is typical of the average work of a large number of pupils, and so on. The answers to some of these

questions, especially those concerning age, sex, and grade of pupils, can usually be learned from the exhibit, but answers to others, which are quite as important in a comparative study, are almost impossible to obtain.

It is, therefore, necessary to omit a great many attractive exhibits from this discussion, simply because the schools from which they were sent have made no provision for helping the student of education to interpret them.

Viewed from the standpoint of organization, the educational exhibits may be grouped under five heads:

- (1) Individual exhibits.
- (2) Collective exhibits.
- (3) Institutional exhibits.
- (4) Commercial exhibits.
- (5) Active exhibits.

An individual exhibit is one made by a single person or school, without reference to what is shown by others. It may be typical of an important class of schools, or it may be an isolated example of special education.

A collective exhibit is one sent by a number of similar institutions, each of which sinks its individuality and unites with the others to form a collection of work typical of all. Nearly all the public school exhibits are collective.

An institutional exhibit is one which represents a system established by recognized authority—usually a public school system. A very good example of this is the exhibit in the Illinois Building, which represents the educational work of all kinds maintained by public taxation in the State of Illinois. This, of course, excludes private schools and all chartered institutions not controlled by the State.

A commercial exhibit is one made by a publisher of text-books or a manufacturer of educational supplies. His motive is, of course, to sell his goods, but he knows that the most effective way to do this is to arrange the exhibit so that its educational value is apparent at a glance. One of the best examples of this group is the Prang exhibit, which contains a series of cards representing a model four years' course in drawing, color, and form study.

An active exhibit is a model school in actual operation. There are several at the Exposition which will be described in a subsequent article.

On account of the infrequency of great expositions, the teachers of this country have seldom been called upon to exhibit their work on a large scale for the benefit of the general public. Frequently educational exhibits are prepared for teachers' gatherings; but, as a rule, these represent only single schools or groups of schools, and are intended for the use of persons who are already somewhat familiar with the work represented.

An international educational exposition requires a different preparation, aiming as it does to illustrate all departments of educational work in such a way that the ordinary visitor may study and compare them with ease. Among the great numbers of visitors, few are experts on any considerable part of the exhibit.

The majority are people who, although interested in educational work, are not familiar with its practical details; who, in order to understand what the exhibit represents, need all the assistance that careful arrangement, plain labels, and well-informed custodians can supply.

The result of this lack of familiarity with expositions is that many schools have not used the best methods in preparing and installing their exhibits. In fact, the greater part of the methods and devices used this year were invented by individual exhibitors to meet necessities as they arose, and were not available for adoption by others until after the Exposition opened. Some are very ingenious, and will undoubtedly be retained as useful aids at subsequent expositions.

A number of schools have succeeded in making their exhibits exceedingly attractive. They accomplish this in various ways. Some use their space as a room—carpet the floor, line the walls with stuff that forms a pleasing background for pictures,



and cover the whole with a ceiling of thin white cloth. They put in substantial oak furniture, tables, bookcases, chests of drawers, and comfortable chairs, and arrange the wall exhibits in such a way that they attract even the casual observer. Some schools add other artistic features. It may be a bust of the founder, a relief model of the campus, or a collection of portraits of celebrated professors and alumni. This room arrangement is, however, exceptional.

Nearly all of the exhibitors divide their space into alcoves, cover the walls with drawings and specimens of school exercises, and place bound volumes of pupils' work on tables ranged along the wall.

Among the show cases used there are many different kinds: glass-covered frames hung on the walls and filled with pictures or other flat exhibits; ordinary show cases supported by legs or by a case of drawers or a cupboard; and large upright glass cases, in which are suspended glass shelves to hold exhibits. There are, also, several varieties of wing frames. One consists of an iron upright supporting a number of glass-covered wings that swing on hinges. This is rather heavy and clumsy and takes up a great deal of room. Modifications of this, fitted with only half the number of wings, are used against the wall. The kind of wing frame that seems best adapted to its purpose is that used for the New Jersey public school exhibits. It is an upright wooden case about 6 inches deep. In front is a glass-covered door, which is usually kept closed to protect the contents from dust. This door is arranged to hold a few specimens of the work with which the case is filled. Inside are a number of light, strong oak wings hung on separate hinges. Each can be detached easily, without disturbing the others. By a simple arrangement of grooves the exhibits, mounted on cardboards of uniform size, slip in and out of the frames very easily. Such cases as these increase the amount of available wall space enormously, and at the same time keep the exhibits from being injured or destroyed. There are a great many different kinds of exhibits displayed on the walls: pictures and photographs of exteriors and interiors of buildings, and of equipments, faculty, and students; specimens of students' work, artistic, literary, scientific, and mechanical; statistical charts and tables; programmes of study and statements of the features of school work to which the attention of the public is specially directed. The methods of graphic statistics are used by many schools with great effect.

One of the most unique features of the educational section is the phonograph exhibit. Five different States have sent wax cylinders stored with records of recitations, oral examinations, and exercises in singing. Attendants are always ready to set the machines in motion and allow the visitors to hear a repetition of work that has actually been done in school. There is always a question whether or not it is work that fairly represents the school; but, in any event, it is very interesting, and when properly prepared is really valuable.

In making an examination of all parts of the educational section, the student can not fail to be impressed with one important fact—that the work of the new education is finding its way into schools of every sort. The laboratory method in science teaching is recognized as the most natural and logical means of educating the senses, and through them the mind. Hence the increasing adoption of the sciences as important elements in school work is accompanied by an equally rapid development of laboratory facilities in schools.

Manual training for boys and girls is growing in favor, and only the great expense of equipment prevents it from being introduced very generally. The work of adapting it to every school grade, from the kindergarten to the institute of technology, is being carried forward rapidly, and the time will soon come when progressive school boards everywhere will make it a part of the prescribed course of study.

Drawing and form study are also obtaining general recognition as necessary parts of a common school education, and object teaching is the order of the day. The latter is especially noticeable in the German school exhibit, where nearly every subject has its models and charts and colored illustrations, intended to teach the pupil through his senses.

The importance attached to scientific methods has produced two results, both of which are shown clearly by the exhibits of higher education—an ability on the part of students to act as well as to think, and consequently an ability to pursue successfully an original investigation. The exhibits of students' work from agricultural and engineering schools are especially rich in illustrations of this point.

There is also evidence that schools of every grade are paying a great deal of attention to the sanitary condition of their buildings and to the physical development of pupils, and are coming to see that, to the pupil, a sound body is quite as important as a sound mind.

An exhibit can give at best only a partial view of the work it is intended to represent. Some of the schoolmen who recognize the fact do all that they can to help the student of education to interpret their exhibits properly. They arrange the whole in a progressive series clearly labeled to show the relations of its different parts; they insert explanations and teachers' statements wherever necessary, to indicate the conditions under which exhibits were prepared; they provide catalogues and special publications for free distribution; they place in a prominent position a question box, into which anyone who is unable to find out all he wants to know about a certain school can drop his inquiries, and they provide for the constant attendance of a well-informed custodian. On the walls they place specimen exhibits; and, in cupboards, portfolios, and drawers, a large amount of additional material that is brought out whenever anyone is sufficiently interested to ask for it. They adopt the prevailing methods of object teaching, and illustrate their outlines of courses of study with photographs of schoolrooms, laboratories, and shops, students at work, and other scenes that will give reality and life to the exhibit. They aim to show only that which honestly represents the average work done by a considerable number of pupils.

Most of the men who make these careful and thorough preparations have gained their experience at other world's fairs. When one contrasts their work with that of some of their fellow exhibitors who appear now for the first time, he can not but wish that America, like France, had a permanent exposition board whose duty it would be to organize all such displays, taking every advantage of previous experience.

II. The final product of education exists only in the mind, and can not be shown in a material exhibit. This is especially true of the results attained by higher education. They may be partially represented by such concrete products as books and models, and by illustrations of equipment, methods, and results, but these things are merely symbols, and mean little to the ordinary World's Fair visitor.

The question may arise in the mind of the reader: "What has the ordinary visitor to do with an exhibit of higher education?" He should have a great deal to do with it, and he would, if it were prepared in a way that enabled him to understand its contents clearly. It is not enough to label each of the pieces and place them side by side. There should be a dominant idea in the arrangement, a unity that could be perceived by any careful observer. There was scarcely an exhibit in the educational section of the Columbian Exposition that showed any such careful preparation, and therefore this article can be little more than a series of running comments on the exhibits from various higher institutions.

Among them all the exhibit from the German universities was by far the most valuable to the student of education. It showed in every part that it was intended to represent not any particular institution, but all of the twenty-one splendid centers of higher education in Germany. It was prepared by the German Government with a view to showing typical specimens of equipment and apparatus, the methods used, and the results achieved in German universities, and also to show historically the influence exerted by the universities on the progress of civilization. Both objects were successfully accomplished, but it was only the expert educationist who could fully understand the exhibit. It was not prepared for the general public, and no provisions were made for helping the casual visitor to appreciate its value. The labels



were brief and written in German, and the catalogues and descriptions which were distributed to persons who made special application were also in German. The university professors who were in charge were courteous and scholarly men, but in spite of their unwearied efforts they could accommodate only a small proportion of the people who wished to be helped to interpret the exhibit. It certainly needed interpretation, but once understood it became a wonderful source of information and inspiration to university men. The central feature was a "collective exhibit of the German universities," which contained 79 volumes written expressly for the Exposition by the most eminent professors in Germany. Each of these men took for his subject his own department of study, and attempted to show, by an historical treatment, the influence exerted by that department on the development of German civilization. Wundt in psychology, Klein in mathematics, Virchow in pathology, and others of equal reputation produced the monographs which form this splendid record of the achievement of German university men.

There was also a remarkable collection of pedagogical literature containing accounts of the origin and development of the German universities, their present constitution and government, biographies of their leading teachers, and a great deal of additional matter. It was from this collection of sources that the German professors drew a large part of their material for the monographs mentioned above. This library had three divisions: (1) General works, including bibliography, history, statistics, methods of university study in general and of the various departments of study in particular, and also student life and customs. (2) Biographies of the foremost university teachers, arranged in four groups, including the men whose work was done (*a*) in the fifteenth and sixteenth centuries, (*b*) in the seventeenth century, (*c*) in the eighteenth century, and (*d*) in the nineteenth century. Among the men whose biographies were given there were not only university teachers, but great scholars, statesmen, and ecclesiastics. (3) Literature of single universities, including their history and their laws and regulations; announcements of teachers and courses; programmes of special occasions; information in regard to scholarships and endowments; and books written by great professors and by students whose work they directed.

There were volumes of architectural drawings showing the plans and elevations of the buildings used by fifteen of the German universities, and photographic views of the interiors of these buildings. The beauty and value of this exhibit were greatly increased by the presence of about twenty-five oil paintings and statues of celebrated German scholars and patrons of learning.

In another section was a collection of scientific periodicals, including specimen volumes of the leading German publications and a bibliography of German periodical literature. There was also a fine collection of scientific books, containing, it is true, only a small proportion of the whole number of scientific works written by German scholars, but nevertheless typical of the contributions they have made to nearly every department of human knowledge.

The technical library exhibit represented with great completeness the several systems in use for arranging and cataloguing books. It showed that while in methods and appliances the Germans are not as far advanced as the Americans, in the number and value of their libraries they are far ahead of them.

The exhibits already mentioned occupied less than half of the space devoted to the German universities. The remaining space contained special exhibits from 29 different departments of study. Each of these was prepared by an eminent specialist, and showed specimens of the apparatus used in teaching and typical examples of the problems attacked and the results attained in original research.

From this brief sketch of the German university exhibit it may be seen that the power of the Government to prescribe a plan for united action was the most important element which insured its success. There is no such power in the hands of the Government of the United States, and consequently the exhibit from our own uni-



versities, although much larger in quantity, was far less representative in character. Instead of being a collective exhibit designed to represent the universities as a whole, it was a series of individual exhibits, each arranged on a different plan. This was inevitable because of the diverse character of American institutions and the somewhat aggressive self-assertion which keeps them apart. Instead of furnishing material to the student of education by showing methods, equipment, courses of study, and the results of research work, it aimed primarily to attract and interest the public. It was this very fault, however, that gave it a certain advantage over the German university exhibit by making it easier to interpret its contents.

Before discussing in detail the American exhibits of higher education it may be well to take a brief glance at the institutions that were, or might have been, represented. There are no two that afford an entirely satisfactory basis for comparison. Some do a considerable amount of true university work, but the greater number confine themselves mainly to offering undergraduate courses. Some have introduced the best scientific methods into every department of study, but many are still far behind the leaders in this respect. Some prescribe rigid entrance requirements and maintain a high standard of scholarship throughout, while others are little above the average city high school. There are, also, agricultural colleges and schools of technology, where the scientific and professional studies come first and culture courses are secondary. If these various types were distinct it might be possible to classify higher institutions, but they lap over one another in such a confusing way that any line dividing them into groups must be drawn arbitrarily. In discussing American exhibits, therefore, the contents of the exhibit rather than the nature of the institution will determine the grouping.

There are several exhibits in which the methods and results of advanced research work were clearly shown. One of the most important of these was the collective exhibit drawn from a number of universities and representing a typical laboratory for work in experimental psychology. Photographs of the interiors and equipment of the several institutions contributing hung on the walls, and the remainder of the room contained apparatus of all kinds for observing mental phenomena and accurately recording the results. Nearby was an anthropometric laboratory, in which were shown the methods and results of work done in observing and recording physical characteristics. There were a large number of diagrams and charts, summarizing by graphic methods the results of a number of very interesting investigations. These two laboratories together revealed a most significant aspect of the work of American investigations—the tendency to make a thorough scientific study of the minds and bodies of pupils of all ages, in order to help each individual to learn in the way that nature intended he should.

The exhibits from Clark University and from the University of the City of New York contained material of a similar character. Clark showed a number of photographs of laboratories and apparatus for this work and bound volumes of monographs and magazines in which the results of psychological research were given. The University of the City of New York showed charts illustrating experiments to determine mental characteristics, such as eye-mindedness, ear-mindedness, and the like.

Among the other institutions showing methods and results of research work were Johns Hopkins, Harvard, the University of Chicago, the University of Pennsylvania, the University of Michigan, the Massachusetts Institute of Technology, and the Hahnemann Medical College of Philadelphia. Johns Hopkins sent a large photograph of the normal spectrum, illustrating the splendid astronomical work done by her professors and her advanced students. She also sent a typical collection of the publications written or edited by Johns Hopkins men in order to show the character, direction, and extent of their investigations and the channels they use in putting their results before the world. Harvard also displayed a considerable amount of astronomical work from both of her observatories—the one in Cambridge and the one she maintains in the mountains of Peru. Each of her scientific departments

and professional schools was represented by a typical piece of apparatus or a collection of specimens or books intended to show her admirable facilities for teaching and the original work done by her professors and students. The latter included two collections of books showing some of the contributions made by Harvard men to legal and historical literature.

There were a number of exhibits showing the methods used in the university for instruction and training. These represented more especially the scientific and professional departments, and attracted a great deal of attention.

One of the most valuable parts of the Harvard exhibit was that which showed the institution as a whole and furnished information in regard to its historical development and the present status of its faculties, buildings, and equipment. This exhibit included statistical charts showing the relative growth of the several departments of study; charts illustrating the success achieved by the elective system which has been so thoroughly tried at Harvard; photographs and plans of buildings and grounds, and a fine collection of portraits and busts of men who have been closely identified with the university. There were also large editions of about thirty different pamphlets for free distribution. These included the regular programmes and announcements and also a number of monographs relating to the opportunities offered by Harvard, the necessary expenses of student life, and the financial assistance that may be obtained, if needed, from the university authorities.

The University of Pennsylvania sent a fine collection illustrating the results of the exploring expedition which she sent to Egypt and Assyria a few years ago; and also a collection of archaeological material from the valley of the Delaware, where her professors have at various times conducted valuable investigations. She also showed a number of photographs and charts illustrating the growth of her different departments and their present condition.

The buildings of the University of Chicago were so close to the Exposition that they were visited by a great many people interested in education. There was therefore no attempt to send to the Fair a comprehensive showing of the work done by each department of study. The most important exhibit from that university was the Yerkes telescope. It represented not work already done, but facilities offered for future research work, and may be regarded as typical of the purpose for which primarily the university was established—original investigation by advanced students.

The University of Michigan sent two collections representing original work done in her chemical laboratories. One contained the results of a quantitative analysis of a number of foods, including wheat, bread, Indian corn, tea, and coffee. In each case the constituents were prepared from their proper sources, and the entire group—i. e., a given weight of the food and the corresponding quantities of its several constituents—was placed in glass jars and clearly labeled. The other collection represented a similar investigation in the department of metallurgical chemistry. Iron ore, cast iron, blast furnace slag, steel, wrought iron, coal, limestone, and brass were all opened up in this way. These two exhibits were good illustrations of the way in which the results of scientific investigation may help in solving everyday problems of industrial and domestic life.

The Massachusetts Institute of Technology sent two important collections illustrating the original work done by her students and professors. The first was a complete set of the theses written by the class of 1892 when they were graduated. There were 128 men and 4 women in the class, and each of them presented before graduation the results of a distinctly original investigation conducted either alone or in conjunction with one other member of the class. In every instance the drawings or other illustrations made as a part of the thesis were shown in the exhibit.

The second collection was a complete set of the lecture notes prepared by institute professors for the use of their own students. In some cases these notes have been expanded and published in book form through the customary channels. Usually, however, the notes are specially prepared for each class, and instead of being pub-



lished are privately printed in small quantities. This is done in nearly every department of the institute and furnishes a striking illustration of the purely inductive method used by its professors, and of their untiring efforts to give to their students the latest results of scientific thought and investigation.

The Hahnemann Medical College of Philadelphia made a very unique contribution to the educational section. It was the nervous system of a man, carefully dissected out by a skillful surgeon. This was mounted, so as to show general outlines, with the brain occupying the position of the head, the spinal cord, the position of the backbone, and the nerve bundles and nerve fibers, the positions of the body and limbs. It enabled the visitor to get a definite idea of the way in which the fibers of the nervous system, starting from the brain and the spinal cord, penetrate every part of the human body.

There were a number of exhibits designed to show something of the methods, equipment, and results of regular college work. The list included most of the above-mentioned institutions, and also ten or twelve endowed colleges and almost an equal number of State universities. Some of these exhibits were so meager that they deserved little attention, while others were of great interest and value. It was noticeable, however, that even among the exhibits sent by the more prominent colleges there was great diversity. Some aimed to show their history, others their equipment, and still others the work done by former students and professors. Most of them seemed to regard a showing of present work—the courses of study, the methods used, and the results achieved—as a minor part of an educational exhibit.

Princeton emphasized her history. She sent portraits of all her former presidents, pictures, a relief model of her buildings and grounds, and a collection of interesting documents and relics connected with her development. There was also a large collection of books, which included, as far as possible, all of the important literary productions of the faculty and alumni. Student life was represented by photographs of famous athletic teams and other organizations, and by pictures of the various college societies and the houses they occupy. A few models and drawings and a case of museum material for teaching historic ornament were the only distinctly educational exhibits.

Yale showed a series of large photographs giving general views of buildings and grounds, interiors of laboratories, recitation halls, libraries, and museums; apparatus that is either very elaborate or especially characteristic of Yale work; and athletic teams that have won high laurels for their alma mater. The photographs were so fine that they really gave to the visitor a good idea of the material equipment of the university. But there was shown no work of students or professors, nothing to represent the splendid contributions made by Yale to literature and science. Columbia College was represented by a fine series of statistical tables and graphic charts showing the important features of her history and her present condition. One very interesting part of the exhibit consisted of two maps placed side by side, one representing the present site of the college and the other the new campus on Morningside Heights. The maps were drawn to the same scale and showed in a very effective way the great increase of area that will be afforded by the new site.

Brown, Amherst, Williams, Colgate, Hamilton, Rochester, Lehigh, Oberlin, Beloit, and Leland Stanford Junior, should be mentioned at least in the list of colleges represented. Most of them had attractive and tastefully arranged alcoves, but their exhibits showed no important features not already mentioned in connection with other institutions.

Among the women's colleges Vassar, Wellesley, Bryn Mawr, and many coeducational institutions were represented. Bryn Mawr had in the center of her exhibit a model of the campus, showing the location of halls, dormitories, the gymnasium, and several tennis courts. On the walls were photographs giving characteristic views of interiors, a chart showing courses of study; and statistical tables giving



the post-graduate history of all of her *alumnæ*. There were also several Ph. D. theses and partial files of student publications.

It may be of interest to mention here the exhibit made by the Association of Collegiate *Alumnæ*. This body of highly educated women is growing rapidly in numbers and exerts a very strong influence in many parts of the country. Its members aim to make the best possible use of their college training in helping to solve social and industrial problems. In the exhibit were a number of pamphlets containing addresses delivered before the several branches of the association. One, which may be taken as typical, was written by a professor of chemistry of one of the leading institutions of the East. Her subject was: "The relation of college women to progress in domestic economy." The writer indicated some of the ways in which a scientific training may be of use in the family and discussed the social and economic aspects of the servant question, the assistance that a knowledge of biology offers to the buyer of foods, and the relation of chemistry to cooking. She presented evidence of the growing tendency to make the higher education of women "tell," and to direct their effort into channels which will lead them to become better housekeepers and more effective workers in fields peculiarly their own.

The State university exhibits in every instance adjoined the public school exhibits. Only two States, Illinois and Michigan, made any serious effort to show the work of their respective universities. The other States represented were Pennsylvania, Indiana, Wisconsin, Minnesota, Nebraska, Oregon, and California. Several of them showed only a few pictures of buildings and equipment and photographs of professors and students; others added outlines of courses, examples of student work, and perhaps copies of their student publications. One or two sent catalogues for distribution, but as a rule they showed very little to indicate the true nature of their work.

The exhibit from the University of Michigan may be divided, for convenience in discussion, into (a) general exhibits, (b) departmental exhibits, and (c) engineering exhibits. The general exhibits are described in the University Record for June as follows:

"The exhibit includes topographical maps of the campus, made from actual surveys by civil engineering students, on which all buildings and natural objects are accurately located; a tolerably complete set of views of all of the buildings, with floor plans of many of them, together with interior views of all laboratories, hospitals, many recitation rooms, and the library; a condensed account of the educational system of Michigan and a summary of the University Calendar, together with photographs of the president, the regents, and other officers, including members of the several faculties, all mounted and displayed on a revolving chart stand; a brief history of the university and of its several departments, together with a summary description of their present condition exhibited by a series of 19 charts, 24 by 30 inches in size, framed and mounted so as to swing about a central upright; and a bookcase containing copies of nearly all the publications of professors written while connected with the university."

The list of departments sending exhibits included chemistry, medicine and surgery, dental surgery, the library, and the museum. A part of the chemistry exhibit has been described above. It was supplemented by other collections of work done by students, both in the laboratory and the class room, and was intended to illustrate methods of teaching.

The exhibits of medicine and surgery contained an admirable presentation of the equipment, the methods, and the courses of instruction in those departments. They included a very complete series of photographs carefully interpreted by means of printed statements, and also a number of preparations such as all students in these departments are required to make.

The museum was represented by some rare zoological specimens from the Philippine Islands and a collection of the birds and mammals of the State of Michigan.

The engineering exhibit was a very complete showing of the work done by students in the engineering laboratories and in the several courses in drawing and design. It included a number of hand tools and other small pieces made in the wood shop, the forge room, and the machine shop, and several larger tools, such as a forge, a drill press, and a machine lathe, all of them built by students. The exhibit of drawings contained examples of the free-hand exercises and the work in geometrical construction and descriptive geometry, and also of the working and finished drawings made in the more advanced courses in machine design, stereotomy, and surveying.

The exhibit from the University of Illinois was not in the Liberal Arts Gallery, but in the Illinois State Building. It occupied a large amount of space and could display, therefore, not only students' work and pictures of equipment, but students at work and specimen pieces of the equipment itself, taken directly from the museums, shops, and laboratories of the university. This gave it a marked advantage over the other higher institutions.

In the general university exhibit was an alcove containing pictures of the faculty and of the buildings, catalogues for free distribution, and a number of diagrams and graphic charts showing the courses of study and the recent attendance in each department.

In the departmental exhibit the colleges of agriculture, engineering, science, and literature were all represented. The engineering and science exhibits were, however, the most prominent. The general plan was to give one or more alcoves to each department and there show equipment and students' work. In some there were specimen pages of student exercises framed and hung on the wall, and the corresponding work of the entire class bound in a single volume and placed near by on bookshelves. In other departments (physics, for example) there were shown in glass cases series of typical experiments, with the apparatus properly arranged and beside it a student's notebook open to the page on which the results of the experiment were recorded. In the alcoves for architecture there were groups of drawings, to show the amount of work done in each year of the course and some typical examples of original work in house planning and design. One of the special features made possible by the large amount of space given to this exhibit was a machine shop, in which students from the university worked several hours each day. It was separated from the rest of the exhibit only by a low railing and contained a milling machine, a machine lathe, a speed lathe, and a dynamo—all of them driven by an electric motor. This shop furnished a valuable illustration of the thoroughly practical training that is given to professional students in the best engineering schools.

The most comprehensive and symmetrical exhibit of engineering education was that contributed by the Massachusetts Institute of Technology. It contained a number of large photographs showing exteriors and interiors of the buildings and a complete set of architectural plans and illustrations of the efficient system by which the newer buildings are heated and ventilated. Organization was shown in a bound volume containing specimen pages of publications and announcements and copies of all of the blank forms used by the officers of administration.

The work of the several departments was displayed in a very thorough fashion in separate alcoves. Each alcove contained on the walls specimen drawings and designs and on a central table a large portfolio of matter specially prepared to show the plan of work. This portfolio gave, as far as possible, a complete picture of the course—the list of instructions, the subjects studied arranged in order of sequence and showing how much time is devoted to each; the methods of instructors, described in printed statements prepared by the head of the department; the equipment, shown by numerous photographs, each of which was described in detail; and specimen pages of the notes prepared by professors and those taken by students.

In the center of the exhibit were cases of shop exercises in carpentry, forging, pattern making, etc., each piece carefully labeled and the whole arranged in a pro-



gressive series. A special catalogue accompanied this part of the exhibit, and a circular was given out describing its main characteristics and its relation to the work of the other departments of the institute.

There were several large exhibits of shop and laboratory products, an electric motor, a force pump, and a case of chemicals prepared by students for their own use. Student life was shown in a portfolio which contained photographs of athletic teams, and of musical, literary, and social organizations; specimen pages of student publications; and a printed account of all the prominent and social features of institute life. The collection, as a whole, represented the institute so well that it is said that if the entire institution were to be swept away it could be reconstructed from the information contained in the exhibit.

One of the most interesting exhibits of higher education was on the battle ship *Illinois*, and represented the work done at the Annapolis Naval Academy. It consisted chiefly of text-books, examination papers, and records from each department of study and cases of shopwork done by the cadets. Besides the usual exercises from the drawing-room, forge room, wood shop, and machine shop, there were others peculiar to Annapolis, such as specimens of work done in splicing cables, braiding ropes, and placing pulley blocks, designs for marine engines and boilers, and illustrations of problems in seamanship and gunnery. There were a number of charts showing results of the physical tests conducted at frequent intervals, and also a number of student possessions—foils, boxing gloves, and footballs—that were very suggestive of the cadets' fondness for athletic sports.

The exhibit from Purdue University was, in some respects, one of the best in the American section. It represented very effectively the objective work done—the shopwork, drawing, and laboratory tests. "The making of a lathe" was shown in a way that gave the visitor a clear notion of the entire process of designing and constructing machines. First came a set of blue prints and working drawings showing the form and dimensions of each piece of the lathe, and a set of finished drawings showing the grouping of the parts. Then came a complete set of the patterns from which the lathe was cast; then the rough castings made from these patterns; then the finished castings, and finally the completed lathe. The same idea of logical development was used in other parts of the shop exhibit. The process of casting was illustrated by a series of ten or twelve molders' flasks, the first empty, the second half filled with sand, and the others showing the successive steps taken in making the mold, drawing the pattern, cutting the gate, pouring the metal, and taking out the casting. The exhibit of forging was equally clear. A pair of tongs, for example, was shown first in the form of stock, then prepared for welding, and then ready for use.

The most unique feature of this exhibit, however, was a small working model of the locomotive which is a part of the Purdue laboratory equipment, and is used in making shop tests that are said to be as accurate as road tests. The load is obtained by applying hydraulic pressure to the wheels and the influence of grade by adjusting the driving wheels at their points of contact with the free wheels on which they rest.

The exhibit of the Rensselaer Polytechnic Institute was entirely different from that of any other engineering school. It contained, it is true, a small amount of students' work, i. e., several portfolios of geometrical and machine drawings and exercises in graphics and surveying, but the main part of the exhibit was designed to show, not undergraduate study, but the work done in after life by graduates. There were pictures of bridges, railroads, aqueducts, and many other engineering works constructed wholly or in part by graduates; and several machines showing inventions made by them. Although very interesting, these things can not be regarded as legitimate parts of an educational exhibit, because the mature work of an engineer is influenced by many factors besides the training received during the early years spent in professional study.

The collective exhibit of agricultural colleges and experiment stations was one of the most important and suggestive parts of the entire Exposition. It represented



about sixty institutions which offer to both men and women "instruction in agriculture, the mechanic arts, and various branches of physical, natural, and economic science with special reference to their application in the industries of life and to the facilities for such instruction." It contained illustrations of equipment and methods of instruction and specimens of students' work, which showed that both the colleges and the stations are exerting a most important influence; the colleges by giving students a sound training in the methods of science and their practical application, the experiment stations by making an united effort "to create positive knowledge toward the development of an agricultural science." The illustrations of equipment included a considerable amount of material used in teaching how farms should be laid out and drained, buildings arranged, soils improved, crops planted, tended, and harvested, and stock cared for at all seasons. Under "method of instruction" it was shown that the laboratory method is used wherever practicable, and that the list of laboratories includes not only the usual rooms for experimental science and shopwork, but also fields, stables, orchards, and gardens. The student work was, as might be expected, of a very practical character—shopwork of all sorts, scientific preparations, samples of crops, and products of the dairy, as well as needlework, cookery, and preserved foods.

There was evidence of a most earnest effort on the part of these institutions to work together, each making its course as broad as possible by forming an alliance with a college which offers instruction in the liberal arts; each paying special attention to local conditions in order to make its influence felt in its immediate neighborhood; and each recognizing in its research work the principle of division of labor and attacking certain definite parts of the whole great problem.

The movement for university extension was represented by exhibits from Oxford, the University of Chicago, the University of the City of New York, and several smaller colleges. Oxford sent a case containing photographs of the exterior and interior of the building she has devoted to this work, examples of the publications issued and the blank forms used, a specimen traveling library containing 31 volumes, and a considerable amount of statistical and other information in regard to the history of the movement in England.

The University of the City of New York and the University of Chicago showed on wing frames sets of administrative blanks and specimens of the announcements and other publications issued in connection with extension work in both places. There were also several traveling libraries illustrating the methods used in furnishing to each lecturer a moderate number of the best reference books bearing on his subject, and sending them with him wherever he goes, so as to furnish his students with a small working library.

The Chautauqua exhibit may be mentioned in this connection, not because the Chautauqua system resembles university extension in its specific aims and methods, for it does not, but because it, too, is a movement for popularizing higher education and fostering a taste for the various lines of study. The alcove devoted to this exhibit contained a very systematic showing of the work done in the Chautauqua literary and scientific circles, and also in Chautauqua College. Programmes and leaflets explaining the work were freely distributed, and a great many visitors were led to recognize for the first time that "Chautauqua" stands for two very distinct things: (1) Literary and scientific work done at home during the year by people who wish to be guided in their reading and study, and (2) thorough college work in all branches done at Chautauqua, under competent university instructors, during six weeks of the summer vacation.

For obvious reasons the greater part of this article has been devoted to a comparison of American educational exhibits. This was not because the foreign universities sent nothing, for Germany, France, Russia, Canada, Japan, and the South American Republics were all represented, but rather because of the greater importance to us of a study of education at home. We could derive great profit from a knowledge of

foreign schools and foreign institutions, but after all, it is the American problem which confronts us, and the American solution that should receive our closest study.

III. The public school exhibits at the Columbian Exposition proved to be of great value to the student of education. This was not because they presented a complete picture of the best systems of public education the world over, for they did not; nor was it because they fairly represented the work done in the schools of any single country, for this was not true even of the United States. The great value of the exhibits was due to the fact that in spite of their fragmentary character and (in many cases) hasty preparation, they embodied ideas and ideals of popular education that could not fail to be helpful and inspiring to every thoughtful visitor. They afforded teachers an opportunity to compare the plans, methods, and results of the school work of many different nations and to see how widespread is the present interest in certain great educational movements. Recognition of the value of nature-study, the use of objective methods, the incorporation of kindergarten and manual training schools into systems of public education, these and many other important features of educational progress were illustrated, not only by exhibits from the United States, but also by school work sent from such widely separated countries as Japan, Canada, Russia, and the Argentine Republic. Visitors found, also, that both at home and abroad increasing attention is being paid to the training of teachers and the building up of a science of education, and that from distant Montevideo to Tokyo on the one side, and St. Petersburg on the other, there are growing up educational museums which are important factors in the development of national systems of education. American teachers were newly aroused to a recognition of the many ways in which a well-equipped museum would help them in their work, and they frequently expressed a hope that America would not neglect this great opportunity to secure the most important World's Fair collections and found such a museum. They will be interested to learn that this plan has been carried out, and that the city of Philadelphia has secured some of these collections, and intends to provide for the establishment and maintenance of a great educational museum.

During the Fair the foreign collections were of little use to students of education, since many of them were placed in out-of-the-way corners, and some were not even unpacked because of the limited amount of space assigned for educational exhibits. It was deplorable that the men who conceived and carried out the plans for the Fair on such a magnificent scale should fail to recognize the importance of providing properly for the educational section. It should have been assigned the choicest spot in all the Fair. A recent writer has said: "The progress of man toward higher civilization results from a combination of two important movements: First, that which aims at the acquisition and diffusion of knowledge; and second, that which seeks to apply this knowledge in the arts." The World's Fair officials spent millions of dollars in representing the historical development and the present condition of the arts; but they waited until the Fair was almost ready to be opened before giving formal recognition to the institutions which make it possible to maintain these same arts in their present state and to develop them still further.

The space when assigned, although far too small for the purpose for which it was intended, was larger than had been given to education at any previous world's fair. The greater part of it was devoted to exhibits of public education, and contained a wealth of material for studying important public school questions, such as centralized authority *v.* local self-government; trained teachers *v.* untrained; individual freedom for teacher and pupil *v.* rigid restriction of such freedom; the use of textbooks *v.* the study of nature; and purely intellectual discipline *v.* the simultaneous training of head, heart, and hand. The foreign exhibits contained much valuable material for study along all of these lines, but the writer will use them in this article merely as illustrations of points made in discussing the United States exhibits.



There were two ways in which the visitor could get a broad view of public education in the United States: First, by studying the exhibit sent from Washington by the Bureau of Education; and second, by studying the exhibits of organization and administration in the several State sections. The exhibit of the Bureau of Education was intended to show what attitude the National Government assumes toward schools and colleges in this country, viz, one of encouragement and moral support to every educational institution, and of direct assistance to three important classes of schools: (1) The public schools in each new State; (2) agricultural colleges (of which there is at least one in every State in the Union); and (3) the schools of Alaska. The Bureau also cooperates with schoolmen, as far as its funds permit, in translating foreign publications and in collecting and publishing information of any sort that will help the cause of education.

The Government exhibit, therefore, consisted largely of the publications of the Bureau, including books, charts, maps, and statistics; books collected by the Bureau, such as catalogues of the colleges and universities of the world; catalogues of secondary schools, copies of educational journals, and reports of State and local school superintendents. There was also an interesting showing of Alaskan school work and the collective exhibit of agricultural colleges which was mentioned in a previous article.

It was necessary, however, to examine the State exhibits in order to study the actual conditions under which public school work in different parts of the country is carried on. The diversity found in the exhibits of school laws and organization showed at once how entirely independent each State is in controlling these matters. In some States, e. g., Indiana, the authority is centralized, while in others, notably Massachusetts, the principle of local self-government prevails. In studying the educational exhibits this fact had to be kept in mind constantly in order to estimate properly the importance of small collective exhibits as compared with large individual exhibits.

Nearly every State exhibiting made some attempt to show school resources and organization, but only four or five did this with marked success. Massachusetts, New York, and Michigan were among the foremost, sending maps, charts, and printed documents, and using a great variety of graphic and tabular methods to illustrate important features of their respective State systems.

New York sent a large wall map, on which were indicated not only the location of every educational institution in the State, but also the character of each, whether public or private; if sectarian, whether Protestant or Catholic, how supported, and whether it admits men only, or women only, or both. This map was a masterpiece in graphic representation, and attracted a great deal of attention.

Michigan sent a smaller wall map, answering many of the same questions by a similar system of arbitrary signs, and added a series of county maps that were placed on wing frames at the level of the eye, and could contain, therefore, a far larger number of details than if hung on the wall. By the side of each map was a column of statistics in regard to the schools shown upon it, giving school population and attendance; the number of teachers (male and female), and the average salaries of each; the number of schoolhouses and their capacity; the cost of maintaining the public schools, and statements in regard to the taxes assessed for their support. These maps were supplemented by graphic charts on which the important totals of the public school statistics of the State were separately shown, and by a series of photographs of the buildings, the teachers, and the pupils of representative schools throughout its State. Each photograph was accompanied by a concise statement in regard to the course of study, the cost of maintenance, and the number of teachers and pupils in the school shown. To represent the administration of all of these schools there were collected in a single volume typical sets of the administrative blanks used by the central authorities and by many of the best schools in the State.



This splendid showing of organization and administration, together with the exhibit of pupils' work, gave a good picture of public education in Michigan from the kindergarten to the university. The visitor could study the State system as a system, and see where the schools are, of what materials they are built, how well attended, what the pupils look like, what they study, what preparation the teachers have had, what salaries they receive, how school funds are raised and finances managed, and how school supervision and other details of organization are controlled. Michigan is not mentioned thus prominently because the separate parts of its exhibit were necessarily better than the corresponding parts of other exhibits. On the contrary, the collection of pupils' work, for example, was very inadequate to represent the schools of the State or even of its larger cities. It is mentioned because, in showing its system as such, it combined nearly all of the good features to be found in the State exhibits.

California sent relief maps to show the distribution of her rural schools, and South Dakota sent maps showing the location of school lands. A number of States contributed fine statistical charts, and several sent collections of reports and school laws. New York made a very comprehensive showing of the work of the board of regents, including in it many reports and bound volumes and some valuable graphic charts.

Only a few States sent maps to show the location of every public school building, but nearly all sent numerous illustrations of school architecture. These included photographs of the exteriors of public school buildings, plans and elevations of typical city and country schools; descriptions of the methods used in heating, lighting, and ventilating schoolhouses, and photographs of interiors showing the general appearance of recitation rooms and laboratories in use, their furniture and fittings, and, in many instances, the pupils themselves, either busy at work or else grouped in the foreground. It was noticeable that many of the Western cities had especially handsome schoolhouses, and that in all parts of the country the schools recently built showed a marked advance over their predecessors, both in architectural beauty and in fitness for school work.

The fine collection of photographs sent by the Bureau of Education to represent library architecture should also be mentioned here. It contained numerous plans and elevations and about two hundred photographs of large library buildings in all parts of the country, and it was studied with great care by visitors. In many parts of the educational section there were supplementary exhibits—reports, bibliographies, and statistical tables—giving further information about libraries. It was very interesting to study the American library exhibits in connection with those sent by the German and other foreign Governments, in order to see how our country compares with the other leading countries of the world in providing for this great department of public education.

School architecture and equipment were also represented by a number of model schoolrooms fitted up for the use of the several active exhibits. These were located in various parts of the grounds, and, although only one or two were designed to represent public school work, all of them will be noted here for the reason that a model room ought to show the best equipment for every school of the grade represented, whether public or private.

There were two of these rooms in the Illinois Building. One was fitted up under the direction of the State superintendent of public instruction, and contained a representative collection of school furniture for teachers and pupils, and also a considerable amount of apparatus for instruction, maps, pictures, and diagrammatic charts, collections and apparatus for science work and kindergarten teaching, and a few text-books.

The other was a light airy room, in which, under the auspices of the Illinois board of lady managers, a kindergarten was in daily session. It had large windows on the south and east sides, the walls were prettily tinted and decorated, the window

seats were filled with flowers, and there was the usual kindergarten furniture. It showed not an elaborate ideal, but simply an attractive, cheerful schoolroom, such as ought to be provided, if possible, for every kindergarten.

In the Children's Building there were several model rooms; a crèche in which the babies were cared for by nurses and the "toddlers" were amused with toys and games; a kitchen garden containing the appliances needed in teaching elementary housewifery; a gymnasium provided with simple apparatus for body building; a deaf and dumb school which had no especially unique school furniture, and a sloyd workshop. The latter was equipped with the benches and tools needed in constructing the entire series of models that are made in the sloyd school in Boston, and it attracted a great deal of attention and favorable comment.

The Indian school building in the southern part of the grounds was not intended to be typical of what a school of this kind should be. It was necessarily small, and without the machinery and other appliances needed in teaching the more important industrial branches, and yet it illustrated very well the problems that must be met in these schools; and by means of well-arranged rooms for work and for recitation, and also by photographs and transparencies showing the buildings of several Indian schools, it gave to the visitor a tolerably good idea of how such institutions are equipped.

There were in various parts of the educational section interesting exhibits of school furniture. The Bureau of Education showed models illustrating the historical development of American invention along this line; several manufacturers sent specimens of the furniture now on the market; and a number of foreign countries—notably Uruguay and Japan—showed models of school furniture and fittings.

Appliances and apparatus for instruction did not occupy a very large part of the space devoted to school exhibits. This was largely due to the fact that the objective methods now so generally recognized as an indispensable feature of every scheme of education make it possible to use so many things as "apparatus for instruction" that not merely the contents of a single section but nearly everything in the Fair might be classed under this head by one or another kind of school. There were, however, several exhibits designed especially to show the apparatus used for teaching the principles of science in secondary schools. One represented the amount of apparatus that a school must have in order to secure a special appropriation from the University of the State of New York, and near it was a fuller collection intended to show what additional appliances these schools are expected to obtain as soon as their funds permit.

There were several collections of apparatus made by students in schools for the training of teachers. The most important of these was from the Teachers' College in New York, and consisted of one hundred specimens of simple apparatus for instruction in physics, chemistry, and physiology. The construction and use of each piece were explained by means of diagrams and printed statements. This collection was carefully studied by a great many teachers, who regarded it as one of the most helpful parts of the entire educational exhibit. Several normal schools sent smaller collections of a similar nature, and some added simple apparatus for teaching geology, botany, and other subjects.

Normal schools did not on the whole make very extensive exhibits, as they seemed to feel that their work was hard to represent. It is true that the training of teachers is a process of developing an inner power that does not find immediate outward expression, and that many of the methods used can be illustrated only in an active exhibit. There are, nevertheless, important parts of normal school work that can be shown.

A number of State normal schools sent collections of photographs and bound volumes of written work, but usually not enough to enable visitors to study the methods they use or the results they have achieved. A few exhibits, notably those from New Jersey, New York, and Massachusetts, were more satisfactory in this respect, and the



Illinois exhibit contained a most valuable normal school section. The latter was in two parts, the State schools being shown in the Illinois Building, and the Cook County school in the Children's Building. The large amount of space available gave the normal schools of Illinois a great advantage over those of other States, and they used it well. They devoted a part of the wall space to showing, by means of a series of charts, the courses of study they offer, and the interrelations of these courses. Below were volumes of written papers representing work done by pupils in each subject of study, and also herbaria and other scientific collections made by students. Equipment was represented by means of photographs, and the work of model schools was shown in its relation to normal school training. Methods for nature study and various kinds of illustrative work were prominent in each of the three exhibits, especially in that of the Cook County school.

The exhibits above noted were very essential features of the public school section, but of course the greater part of the space was filled with pupils' work, the walls being covered chiefly with the results of drawing and form study and the shelves with volumes of written work, while the cases contained mechanical and scientific products. It was necessary, for the interpretation of this great mass of material, that each exercise shown should be accompanied by a statement of the course of study to which it belonged, the previous preparation of the student who produced it, and the conditions under which he worked on this particular occasion. In most of the exhibits these teachers' statements were wholly lacking, and in only a few were they at all satisfactory.

Many of the State exhibits were so fragmentary that it was impossible to arrange them in a way that would give a good idea of the system as a whole. Those which were more complete did not adopt a common plan of arrangement, and the result was very confusing. A few of the States made up for this defect by providing expert custodians to assist visitors who wanted to study school work, but where there was no regular attendant it interfered seriously with the usefulness of the exhibit.

Illinois and Washington had plenty of room in their State buildings, and were able therefore to carry out the original "gridiron" plan, viz, to arrange school material so that by going through the exhibit in one direction visitors could follow a single subject through successive grades, and by going through at right angles to this direction they could study the work done in every subject taught in a single grade. The material in the Illinois exhibit was grouped under the heads of (a) rural schools, (b) graded schools, (c) high schools, and (d) manual training schools. The intention was to make an institutional exhibit, i. e., a collective exhibit of the entire public school system of the State rather than an aggregation of individual exhibits from various schools in the State. This proved to be impracticable, because the State has not a uniform system, and there is so much difference between schools of the same grade in different places that no collective exhibit could represent them fairly.

One of the most interesting portions of the Illinois exhibit was sent by the Chicago schools. The greater part of it was displayed on wing frames, of which each was devoted to a single subject of study, and had its contents arranged grade by grade in a progressive series. There were also bound volumes of written work, and a number of drawings, and the whole afforded an excellent opportunity to learn something of what the Chicago schools are doing.

The exhibit of science teaching from the high schools of Chicago was especially well arranged. It included work in physics, chemistry, and biology, and bore evidence of being genuine, i. e., pupils' work prepared in the class room or in the laboratory, as a part of the regular course of instruction. The writer does not mean to imply that this work was exceptional in being genuine, but only that it was exceptional in bearing on its face such clear evidence that it was genuine. It included pictures and descriptions of experiments, showing the material and ap-



paratus used, the methods followed, and the results achieved. These exhibits of actual results, used in connection with photographs, showing pupils at work, enabled the visitor to form a good idea of what the Chicago high schools attempt in science teaching, and how far it is successful.

The science work from Massachusetts and New Jersey and from Kansas City was also especially strong. A unique feature of the Kansas City exhibit represented work done by pupils in collecting seeds, eggs, and insects, caring for them in school laboratories, and observing their habits and growth from day to day. Another suggestive science exhibit (sent by a New York academy) contained collections made by pupils during a summer excursion of several weeks, taken for the purpose of supplementing the regular school work by a more direct study of nature.

In many other ways the exhibits showed that there is a marked tendency in the public schools of America toward introducing nature study as a part of the regular course of instruction and cultivating in the pupils habits of careful observation and experiment. After discovering important truths for themselves they are required to describe and interpret what they have discovered. One of the best results of this method is that it gives them a real interest in the language work involved and helps greatly in developing their power of expression. They are also required to make simple sketches to illustrate their notes and compositions. This fixes in their minds some of the more important facts and gives them an additional means of expression.

There is, however, a real danger in allowing the average teacher to attempt to correlate language work and drawing with science, literature, history, and mathematics. Many of the exhibits of pupils' work, particularly from Western States, served to emphasize this point. It seemed as if certain teachers who attempted correlation had lost their sense of proportion and allowed pupils to devote far more time and attention to drawings than to the subject-matter they were intended to illustrate. A two-hour sketch is out of place on a fifteen-minute problem in arithmetic. It may be that this error is not as widespread as the exhibits would seem to indicate, and that the material shown was prepared for exhibition purposes instead of being regular school work. At any rate such exhibits were open to criticism, for if they were really representative they showed badly arranged work, and if not they should never have been sent to the Exposition.

The exhibits of form study and drawing were important features in every State section. They occupied the greater part of the wall space, not because they were of superior excellence, nor because this subject is given a conspicuous place in every grade of public school work, but, in most cases, simply because they were more easily mounted and more showy than other school products. However, there was a great deal of admirable work exhibited, and nearly every current method of teaching drawing was shown in one place or another. In the New Jersey exhibit, for example, there were five cases of pupils' drawings placed side by side, each showing the results of a different system.

The system most fully represented in the public school section was the Prang. In a central location was the "ideal exhibit" arranged by the Prang Company. It contained a typical series of models and exercises intended to show a complete course in geometrical, constructive, and decorative drawing. Many of the neighboring State exhibits served to show by means of pupils' work to what extent schools had succeeded in applying this system.

The exhibit of pupils' written work consisted of daily exercises, such as compositions, dictations, and laboratory notes; of monthly and annual examinations, and of occasional productions of all kinds. Unfortunately many of the latter were specially prepared for the Exposition, and were revised and copied until it was impossible to tell what they really represented. They formed a marked contrast with the corresponding French exhibits. A single volume sent from Paris by one of the écoles élémentaires may be taken as typical of the French method of showing pupils' work. It contained all of the written exercises of a certain boy from the time he

entered school, at 6 years of age, until he left, eight years later. First there was a picture of him taken when he entered and a preface written by his teacher to help readers to interpret the work which followed. Then came exercises and examinations, grouped to show his progress from year to year and to illustrate the successive steps in the course of instruction and the methods used in teaching. There were in the exercises frequent corrections made by the teacher, and on the examination papers were the original marks, showing what credit the pupil received. There were also copies of his record throughout the eight years and of the certificate he received at graduation, together with his photograph taken at 14. He was said to be a boy of no more than average ability, but it makes no difference in the value of the exhibit whether or not this is true, because the volume represents not one student entering into unequal competition with others, but an individual steadily developing his faculties and striving to improve on his own previous work. It was necessary that he should attend school in the same place for eight years and that all of his work should be preserved in order to make this exhibit possible. Neither of these conditions is likely to obtain in a rapidly growing community, and therefore a similar American exhibit would be difficult to prepare. The fundamental principle involved, viz, the competition of the pupil not with his classmates, but with himself, is, however, one that we could easily adapt to American conditions, and thus provide for a better gauge of the efficiency of our school work than was found in some exhibits at the Fair.

Many teachers who studied the school exhibits seemed to feel that work in their own grade was the most important part for them to see. They gave, therefore, comparatively little attention to the broader aspects of the educational exhibits and confined themselves almost entirely to work which was directly comparable to their own. This may have been the best plan for teachers whose visit to the Fair was so short that they could devote but little time to school exhibits, but this was not always the case. There were some who did not feel any interest in the exhibits from other grades. If our schools should follow the plan adopted by certain of the lower schools in Germany, viz, of promoting the teacher with the pupils, it would result in giving many of the teachers a wider range of interests, and thus in stimulating them to seek helpful suggestions in the work of every school grade.

Among the World's Fair visitors there were, of course, many teachers who took the broad view of education and were inclined to study, as far as their time would permit, each educational exhibit. Among them none appeared to be more interested in all that the schools had sent than the kindergartners. They wanted to see, not only exhibits representing the work of kindergartens and training classes, but also exhibits showing whether or not the seeds planted in a "child garden" are given opportunity to grow in later school life; whether music is continued through every grade; whether the skill acquired in the occupations is used as a foundation for an uninterrupted course in manual training; whether the development of a love for nature is one of the chief aims of all school work, and whether the social instinct which leads the kindergarten child to recognize that he is only one among many continues to be fostered by the study of history and the social sciences. They found indications that in certain places nearly all of these questions could be answered in the affirmative, and in many others they could not.

The real kindergarten exhibits (as contrasted with the exhibits representing kindergarten features in primary schools) were not very numerous, and owing to the difficulty of showing the results of this early work the best of them were far from satisfactory. The one exception to this statement was the active exhibit in the Illinois Building. There every day a group of well-equipped teachers conducted a model kindergarten, that showed to thousands of people during the summer a beautiful picture of happy school life. Visitors were admitted to a low gallery at one end of the room and were requested not to talk while there. The children were brought from their homes to the Fair each morning in an omnibus, and during the



session they took part in the plays and games, the songs and occupations—in everything that is characteristic of a true kindergarten—without paying the slightest attention to visitors or to the many distractions around them. It was a most striking illustration of the influence exerted by a teacher who can make the school work interest her pupils. There were, in addition to the exhibits sent by kindergartens and training classes, several representing manufacturers of kindergarten supplies. Each of these three classes of exhibits was of great value to teachers directly connected with the work, but to the average visitor they did not, as a rule, give very clear or accurate ideas. There was, however, in the Liberal Arts Gallery, one kindergarten exhibit that attracted a great deal of attention. It was sent by the city of Rochester, and contained, in addition to a large amount of material for teaching and of work done by pupils, a series of thirty photographs showing a kindergarten in session. These had been enlarged from kodak pictures taken by an artist who spent a day in one of the public kindergartens, sitting among the children and taking a picture whenever he had a good opportunity. The result was a series of photographs representing nearly every important feature of the daily kindergarten programme.

In this discussion of public school and kindergarten exhibits the writer has followed the same plan as in previous articles, and has merely tried to point out some features of the educational section that were worthy of study, leaving it to the specialists in each department to estimate relative values.

### SOME ECHOES FROM THE EXPOSITION.

[By a correspondent of Education.]

New ideals are the heralds of progress, and teachers will come far short of their privilege if they fail to carry a new impulse for higher and better work into our educational life as the immediate fruits of the Columbian Exposition.

The sight of works of art and industry stimulates and creates a genius to make them; so with the "show work" of the nations and their schools in the educational exhibit. The art display of the Centennial of 1876 gave us art ideals we had never possessed, ushered in the American renaissance, and mainly laid the foundation for the unique, varied, and rich United States collection of gems and masterpieces at Chicago.

Like other parts of the Fair, the educational display is certainly the greatest of its kind in human history, and our schools must gain immensely if we set about the task in earnest. One has noted the mechanical excellencies alone, and this is not to be despised; another noted the exquisite taste, æsthetics, and ethics of education; and others still, the natural freedom and intuitive grasp of truth, of which the most accurate chirography can be nothing more than the sensible dress. Some are enriched in hand, some in intellect, and some in soul; but all are enriched in power to achieve and to do.

For the next few years these new ideals must be tested by experience and adapted to existing conditions and ideals, and what the gain will be can scarcely be conjectured. While the genus will, no doubt, be cosmopolitanism, certainly no prophet can foretell the species.

Our public school system, college system, and university system are waiting to be welded or perhaps organized into one truly national system that will proceed from kindergarten to university step by step and grade by grade, without hiatus or duplication.

With a system of universities like a system of national banks, public works, etc., established in every State and on a common basis; with a national department of education in charge of a competent cabinet officer and on a par with our other great social institutions; with Washington, the acknowledged society and civic center, also the educational center, reaching out to every State, and within and under the



jurisdiction of the same touching every stage of intellectual growth—university, professional, and technical schools, colleges, high schools, grammar and primary schools, and kindergartens—the saving would be immense in time, money, and energy, and the gain in thus enabling the nation to adapt education to the genius of the American people, industrial, commercial, etc., and in advancing the standard of culture uniformly would be practically incalculable. Every heart throb of our educational life would pulsate in every artery and part, however remote.

To change the point of view let us leave the Liberal Arts Building and the mathematical accuracy and military grace of Berlin, Austria, and Canada, the freer nativism of Johns Hopkins and Columbia, the public school naturalness and neatness, especially of some of our Western States, and step down to the Anthropological Building, or just over the way to the Government Building. Museums within a museum and again within a museum! All models of perfection in every appointment! What a quickening interest and enthusiasm the sight of them awakens! Not an interest to be lost in the getting, but a sort of inspiration that comes along with fresh new truth just from the mine and mint. Plans partly developed often fail from want of a suggestive model or ideal; but here models to complement any ideal are on exhibition ready-made.

We have a Smithsonian Institution, a National Museum, of which we need not be ashamed; but its very excellence pleads for a national system of museums—pleads for a museum and library for every city and town of 5,000 and more people, where all can go, nonschool-going as well, and drink in the truths of history, the facts of science, and the beauties of art. The cabinet, so serviceable just now in the public schools, private collections, and college and university collections are good beginnings; but their number and equipment must be increased many fold. This can be done only by special fund or appropriation and State or national control. We are using, and using well, mechanical aids and apparatus, and this equally valuable auxiliary of nature and art, even though it be extinct, nature asks for its rightful place. History first hand can be learned from things historical only, science from science materials, and art from art works. If the best can not be had at once, and for the asking, at least something vastly better than nothing is possible with every teacher and school.

The American teacher is a very accommodating personage. He always has vast opportunities before him, too. He can always wait and patiently labor. Every community, village, and city has within its bounds the materials for a good beginning in mineralogy, natural history, archæology, or history and anthropology, if someone would start the movement and set the project on foot by collecting the scattered materials, relics, manuscripts, etc., and bring them in touch with the people and the present every-day life. He can collect legend and anecdote also, and if no better housing of the project is available take it to the school, the village or city hall; anywhere rather than not to make a start at all. Teachers know only too well that most cities have nothing of the kind and that many smaller cities do not have a general library even. Here is a bright opportunity for works that will tell.

One more thought, some of the States have already by law provided for "free textbooks," apparatus, and other needful appliances, and report it a great saving and wise economy. Why would it not then be still better economy and more practical to make the provision national? With our schools supplied and equipped as a workshop with all needed tools and helps, ample in quantity and variety and suitable in quality, always ready for use, the best would be possible. The saving in money would give all schools the more needful appliances now enjoyed by city and graded schools only. But, say you, the echo has a fading sound, is rather dim or distant. Be it so. Yet, standing by the Children's Building in the twilight, a reverberating sound forced its way to the ear and across the tiny sea between this children's paradise and the palace of Liberal Arts, the echoes seemed to be repeating, over and over, in a playful and impressive music. Was it an echo or only the night wind calling to the dawn?

## WORLD'S EDUCATIONAL EXHIBITS.

By WILL S. MONROE, in *Boston Journal of Education*.

I. The purpose of the present series of articles is to give a brief survey of the educational exhibits from the different States and countries. The field is large and the task correspondingly difficult. In a sense, the entire exhibit is educational; but the articles which are to follow will deal solely with the exhibition of school work and appurtenances. All expressions of values and all criticisms of defects are to be regarded as the individual opinions of the writer. Because of the extent of the field, the articles will deal chiefly with the exhibits from primary and secondary schools.

New England is represented in the department of liberal arts by Maine, New Hampshire, Massachusetts, Connecticut, and Rhode Island, Vermont having sent no educational work for exhibition. Massachusetts very naturally leads in the character and size of her exhibit. Indeed, the Massachusetts exhibit is one of the best of the American States. The arrangement of the work could not have been better, and a happier choice could scarcely have been made for the superintendent than Mr. George E. Gay.

The first important section is that devoted to the kindergarten, Boston, Brookline, Springfield, Somerville, and Holyoke furnishing large quantities of work done by pupils in these schools. In the primary department, Chelsea exhibits some interesting photographs of Superintendent Davis's method of teaching reading. These represent nine different steps in learning to read and cover a period of three years. Another series of photographs represents the work in language. The State course in drawing for a period of three years is fully represented. Springfield sends one of the most complete exhibits in drawing, and the work reflects great credit on the city and Miss Luella E. Fay (now Mrs. Maynard), the late supervisor of drawing. The best work in clay modeling comes from Boston and Quincy. A surprise to all inspectors of the Boston school work is the fact that no work is done with pen and ink during the first three years of the school course. That the children lose by the continued use of pencil is evidenced by the comparison in grades above the third of the penmanship of Boston with that of other cities where writing with pen is earlier introduced. Some interesting work in the form of observation lessons comes from Boston. These lessons consist of descriptions and drawings of the frog, grasshopper, crab, dragon fly, and other typical forms of animal life. Most of the work in elementary science from the Somerville schools is excellent.

In the grammar department, Brookline exhibits some sixth-year botany work which is unusually strong and a study, both theoretical and practical, of domestic economy which classifies the foods and chemical changes which take place in their preparation. The original compositions from Chelsea are well written and well illustrated. Lawrence, Worcester, and Brookline show lines of local study in plants, minerals, and insects. The compositions and drawings which illustrate historic ornament from the standpoint of the grammar grade pupils of Springfield are both creditable and unique, and the extended exhibit of work in arithmetic, under Superintendent Balliet, from the same city is unexcelled.

The exhibit of high school work in Massachusetts is one of its strongest departments, and the work of the Boston high schools is the best. The papers in English are uniformly good, and some superior work is exhibited illustrating the study of chemistry. Malden also offers some excellent work in chemistry. The pupils are given a series of thirty-six problems to solve by laboratory methods. Cases show the results, and notebooks and drawings show the equations and processes. The pen-and-ink drawings, which illustrate a series of lectures and experiments in electricity in the Malden high school, are very creditable. The flora of Berkshire County is carefully worked up by the pupils of the Pittsfield high school, and the



original sketches of the pupils in the Holyoke high school show careful training in free sketching. An interesting feature of the Salem high school exhibit is the local history of that vicinity. The sketches were all written and the photographs all taken by the members of the high school. The work from the Westfield high school was not prepared for exhibition, but was the regular daily work of the pupils. Worcester also exhibited the regular drawing books of the pupils.

An important section of the Massachusetts exhibit is the work in manual training. Boston exhibits three lines of work—the Eliot course, which in some features is not unlike the work from Springfield; the Larsson sloyd course, consisting of thirty-one models and covering four school years; and the Eddy course, which is a combination of the sloyd and Russian systems. The exhibit in manual training from Springfield is in most respects excellent. The wood carving and the work in iron are better than similar lines from other schools, although the B. M. C. Durfee high school at Fall River exhibits some good pieces of wood turning. The Horace Mann School for the deaf has a good line of woodwork on exhibition. The Ling system of gymnastics is illustrated by photographs in seventy-two different positions, and the Boston Normal School of Gymnastics by a similar series of photographs showing the different movements of the system.

There are some unique features about the exhibit of the State normal school at Worcester. One of these is the collection of opinions of former students on the comparative usefulness of the different lines of training given them at the school. Each pupil in this school is assigned one order of plants which she is expected to study during her course and report as fully as possible at graduation, and these reports give great encouragement to the future study of local systematic botany. The individual laboratories constructed and used by the students in the State normal school at Bridgewater reach the high-water mark of modern teaching and reflect corresponding credit on Mr. Arthur C. Boyden, the head of the science department.

The Massachusetts exhibit, although one of the largest, is one of the easiest to study, not simply because of its excellent classification, but chiefly because of the introductory explanations which are to be found in all the bound volumes of written work.

Harvard University has a very full exhibit of charts and apparatus, illustrating more especially the work of her scientific departments. But one looks in vain for some charts referring to the work of the department of education. The Massachusetts Institute of Technology has the best graphic charts to be found in the department of liberal arts. The theses of the class of 1892 are exhibited entire, and many of these are illustrated by elaborate drawings. Amherst, Tufts, and Williams colleges have a good line of photographs and charts, and Clark University presents a strong array of publications which emanate from that institution. The women's colleges of Massachusetts—Wellesley, Smith, and Mount Holyoke—have a good exhibition of buildings and teaching appliances; and the International Institute for Girls in Spain and the American College for Girls at Constantinople—both organized under the laws of Massachusetts—exhibit examination papers and industrial work done by their pupils.

Connecticut is represented chiefly at the educational exhibit by the work of a half dozen of her larger cities. That of New Haven is uniformly good. The coordination of language drawing and literature is better than much of similar work found in the Massachusetts exhibit. Bridgeport exhibits a series of general information and culture charts and the written work of the pupils who follow this course. There are some good descriptions and colored drawings of colonial flags in the Waterbury exhibit and some very fair illustrations of the historical work at Stamford. New Britain sends a large exhibit from her State normal school, the most striking features of which seem to be the work in drawing and color and the nature studies. The State normal school at Willimantic illustrates very forcefully the possibilities in the line of homemade apparatus. Bristol contributes a rather unique volume.



It consists of drawn figures dressed in clothes made by the children. There are a score or more figures and representing national characteristics, as Our Sailor Boy, The German Peasant, etc. Yale University has a very extended collection of bromide prints of buildings, laboratories, and class rooms.

One of the best features of the Connecticut exhibit is the bookcase containing a complete set of the educational writings of Dr. Henry Barnard of Hartford—by common consent the most complete and valuable series of books on education to be found in any language. The collection includes the thirty-one volumes of the American Journal of Education, more than twenty volumes of treatises on educational subjects, the Connecticut Common School Journal, and Rhode Island Institute of Instruction, both of which he edited, as well as his annual reports as State superintendent of Connecticut and Rhode Island and United States Commissioner of Education. The collection also includes over eight hundred pamphlets on education which were edited and printed by Dr. Barnard. This entire collection is a monument to the zeal and scholarship of a great educational leader.

The best work in the Rhode Island exhibit comes from Pawtucket, and consists mainly in related work in language and elementary science. The pen drawings which illustrate the same are in some instances excellent. Several of the bound volumes from the Pawtucket high school are also strong. Pictures cut from illustrated papers seem to form the basis of most of the primary language work in Providence. Newport exhibits the work that is being done with nature studies, but in the matter of expression the papers are not as full and clear as those from Pawtucket. Some of the best wood carving to be found at the exhibit comes from the Friends' School at Providence. Some good work in iron and wood is to be found in the exhibit of the Lockanosset School. Designing and photographs constitute the chief features of the Rhode Island State normal school exhibit. Brown University has models of the Lyman Gymnasium and the Ladd Observatory, and Commissioner Stockwell has a complete set of the annual reports on exhibition.

The exhibits from Maine and New Hampshire are not especially large. Of the former, Lewiston has the fullest exhibit, the best features of which are the pencil drawings and the descriptions of hills. Bath, Rockland, Gardiner, Richmond, Camden, Bangor, Waterville, and Augusta all have a limited amount of work on exhibition. The best part of the Bangor work is the illustrations on the covers of the bound volumes of written work. The State normal schools at Farmington, Gorham, and Castine all send photographs, and Farmington, in addition, some good drawings and written papers. The New Hampshire State normal school sends a full line of the examination papers of the pupils. The written exercises in vocal music from the schools of Nashua are some of the most interesting that have come to the notice of the writer. There is also from Nashua some strong seventh-year language work. The language work from Portsmouth seems also good. That of Littleton is based largely upon pictures. Phillips Exeter Academy is represented in the New Hampshire exhibit by photographs.

II. The group of Middle States—New York, Pennsylvania, New Jersey, and Delaware—are all well represented, except Delaware. New York has the largest exhibit, and New Jersey, in some respects, the best. The New York State exhibit represents very fully all the educational interests of the Empire State—the institutions managed by the regents, as well as those managed by the department of public instruction. A feature of the New York exhibit which adds materially to its interest is the series of attractive handbooks given to visitors. These explain very fully the aim and character of the work of the different institutions.

New York City sends the largest exhibit. A great number of bound volumes, representing the different subjects taught in the primary and grammar grades, are submitted. There seems to be little coordination of these various subjects, and the language and composition work of the lower grades, to a great extent, is technical. There are several volumes of language work, however, from the manual training

schools which are quite strong; and some good seventh-year work in geometry is to be found in the New York City exhibit.

Buffalo offers photographs of her pupils. The sand maps made by the pupils of the Cambridge Union School are better than most similar maps that have come to the attention of the writer. The sloyd work of the girls in the Albany high school seems better than that of the boys. The State normal school of Oswego exhibits a full line of the text-books in use, as well as the books written by the alumni and faculty. An interesting phase of the work in psychology from Oswego is the introspective essays, in which the students tell the story of their own early lives.

The school of pedagogy connected with the University of the City of New York exhibits some graphic charts illustrating tests in vertical writing and in ear-mindedness and eye-mindedness; also an interesting line of old text-books belonging to Prof. Jerome Allen and used in the historical classes. The mechanical drawings and water colors from the Mechanics' Institute at Rochester are strong, and the College for the Training of Teachers, New York City, presents a line of work in thin wood, with drawing applications, that seems both ideal and practical. This institution has solved an important problem in the invention of a manual training desk cover, which admits of the regular schoolroom being used as a workshop. Felix Adler's Workingman's School has a good exhibit in manual training. The library features of the exhibit of the University of the State of New York are admirably illustrated. The Rensselaer Polytechnic Institute at Troy makes an interesting exhibit in maps, charts, and photographs, as do also Cornell University and Columbia College. The exhibit from Pratt Institute, Brooklyn, is certainly one of the best of its kind to be found in the Building of Liberal Arts. The free-hand drawings of casts, still life, sketches, and composition studies are excellent. The original designs applied to book covers, wall paper, oilcloth, silk goods, and draperies evince great skill and art training. The normal art course, under Walter S. Perry's direction, is in every sense a splendid educational exhibit.

Pennsylvania is represented chiefly by Philadelphia, Pittsburg, Reading, Harrisburg, Allegheny, and the colleges of the State. The department of public instruction has a full set of the State reports and the Pennsylvania School Journal, as well as a very complete map showing the educational institutions, both elementary and higher, in the Keystone State. In the Philadelphia exhibit one finds some ingenious papers and drawings illustrating historically the development of the nation, and some good pen-and-ink drawings from the girls of the normal school. The one feature of the Philadelphia exhibit which stands out strongest is the manual training schools—the work in wood and iron and the sewing. The possibilities of this work seem very great when one notes the various forms of expression which the teachers in these schools call to their aid. One finds, for instance, the electric plant which the pupils have made for themselves, applications of drawing in Greek architecture and historical art, graphic illustrations in ancient history and literature, pattern making, designing of calico, and economic botany studied in relation to the native woods. Garments are made by the girls in grades from the third to the eighth, and the sewing throughout seems very good.

The penmanship in the Pittsburg schools in all grades below the high school is good, and in the sixth and seventh years there is some good language work. One fails, however, to find any central line of thought as the basis of the language lessons. There are some creditable applications of drawing to wood carving, and a pretty complete exhibition of sloyd as carried on in one school. Allegheny sends the strongest line of language work from Pennsylvania. Geography and elementary science furnish the materials for thought expression, and pen drawings are freely used as an auxiliary. The language work from Hazleton consists mainly in writing from pictures, while that from Altoona is largely descriptions from natural objects. Chester has some strong compositions on the native woods and Titusville some good drawings from nature. Harrisburg has a very complete exhibit of work in drawing,



including a good deal of work in designing and use of color. The State normal schools have very meager exhibits. The school at Slippery Rock has submitted the fullest line of work done by pupils, and the school at Millersville has a very creditable display of lesson plans, schedules, and photographs.

Pennsylvania State College exhibits an interesting piece of apparatus—a dynamo for electrolytic work—designed and made by the students. Bryn Mawr College for Women exhibits the best model of buildings and grounds to be found in the educational exhibits, and the University of Pennsylvania illustrates very fully her working laboratory in physiology. The giant microtome, designed by Dr. Milton J. Greeman, attracts very general interest. The dyed cotton, woolen, and silk yarns from Lehigh University are of special interest to the students of chemistry, as well as the chemically pure salts prepared by students. Girard College has a full line of work in wood and iron, and the Ogontz School is represented by a good series of photographs and water-color paintings.

New Jersey has solved the problem of economy of space. Her exhibit is compact and satisfactory, and represents a wide range of educational interests. The State normal school exhibit is one of the best. The music charts made by the teachers in the primary schools of Trenton are unique. The pen drawings from the New Brunswick high school are interesting, as are also the zoological drawings from Jersey City. Some of the best language work comes from Plainfield, and the best clay modeling from Morristown. Camden sends from her fifth grade a varied line of work in tin—cups, dippers, pans, funnels, etc. The wood carving from Montclair and South Orange is excellent. The exhibit from the State normal school is very satisfactory. The papers submitted by the classes in the history of education and psychology show healthy lines of study. In the latter subject no text-book is used. The students are given problems and experiments, the results of which form an interesting feature of the exhibit. The pen and language work of the modelschool is uniformly good. A very pretty and costly piece of work in the New Jersey exhibit is a large satin map of the State made by the students of the Institute of the Holy Angels at Fort Lee. Princeton University submits 3,000 volumes written by graduates and officers of that institution, which is scarcely more than a third of the whole number that have been written. There is also from Princeton a very satisfactory series of photographs of the student life—social, literary, religious, and athletic.

III. But few of the States of the South are represented at the educational exhibit. Texas, which is doing so much for her schools, sent nothing. The best exhibit south of Mason and Dixon's line is that of Arkansas, 67 towns of that State having contributed something to the exhibit. There are 57 bound volumes from Little Rock, one-third of which is the work of colored children. Photographs of all the white and all the colored school children of the city accompany the display. A great deal of attention seems to be given to making outline maps, although there are some good descriptions of plants. Fort Smith had a good display of pen-and-ink drawings from the high school, and pencil drawings from the lower grades. The pressed and mounted flowers from Hot Springs are creditably arranged, and the photographs of all the school children are of interest. The country and village schools exhibit a great amount of spelling in columns and technical grammar, but the ability to write good English is uniformly weak.

The better part of the Maryland exhibit comes from Baltimore. Some interesting graphic charts are exhibited showing the occupations of the children of that city. The language work through the lower grades is stiff, but the penmanship in most instances is excellent. There is some very good work in wood from the colored manual training school. A number of the subjects pursued in the high school are taken up in the grammar grades of most other cities. The Baltimore manual training school has a large and creditable exhibit of work in wood and iron and several complicated pieces of machinery. The Woman's College of Baltimore exhibits some suggestive



tables showing the increase of physical development of girls after six months' exercise in the Swedish educational gymnastics. The Johns Hopkins University has a neat display of photographs and publications. One is impressed with the range of the latter in the higher regions of intellectual activity.

In bulk the Florida exhibit is not small. The St. Augustine high schools show a series of blue prints that have been developed in the chemical laboratory. The English work in the Jacksonville high school scarcely bears comparison with middle-grade grammar work in most Northern cities. Much of the language work throughout the South seems to be confined to technical grammar. The geography work centers largely about map questions, and these too often of no importance. In some instances the teachers have added introductory prefaces to the volumes of bound work in which they give their aims and methods. One teacher, in concluding one of these prefaces, writes: "The result of my method is very evident and in many cases surprising. For instance, one of my pupils, just entering her eighth year, began the study of geography. In three months' time she could from memory name almost every country in the world and the capital." Another: "I have a pupil of 15 who excels anything I have seen in city schools. She can, entirely from memory, name every country, province, and state in the world; give its capital, largest city, seaport, principal mountains, rivers, and lakes; also the exports and imports of every country of any importance. She knows the bays and gulfs that indent the coasts of both continents, the seas and their location, the islands and their situation." Poor child!

Kentucky has a large exhibit, but it has been overloaded with red and blue ribbon—a fault which Kentucky shares in common with at least a half dozen Northern States. The largest display comes from the Louisville Free Kindergarten Association, which is somewhat marred by the inharmonious combinations of colors. Paducah has some good charcoal drawing, and some helpful scrapbooks for teaching geography and history. The manual training work from Louisville and the penmanship from some of the colored schools in Frankfort are both good. The illustrated number work that one finds at Ashland is along the line of better objective teaching in the primary grades. Comparing the work of the pupils of the colored schools with that of the pupils in the white schools, one is sure to find greater uniformity in the case of the latter. The degrees of excellence in the colored schools are much more likely to vary than in the schools for the whites.

IV. Ohio, Indiana, and Illinois are all represented with large and creditable displays of school work. The three large cities of Ohio—Cleveland, Cincinnati, and Columbus—have separate booths, while the remaining towns of the State exhibit in bulk. One thing that impresses the inspector of the Cleveland exhibit is the freedom in the drawing work. It may in some instances transgress the lesser canons of art, but it is always free and expressive. The English papers from the Cleveland high school are good and show considerable individuality, but the English of the English papers is better than the English of the history papers in the same school. The graphic charts from Cleveland are an interesting feature of the exhibit, and one of the departures noted is the pedagogical library. Judge Draper has been able to make an arrangement with the city library by which the pedagogical books have been segregated and a teachers' reading room provided.

Cincinnati has not been afraid to display the first year's work. In studying the exhibit of this city the impress of Dr. White's educational doctrines is everywhere apparent. The drawing and color work, which follows the lines given by Miss Sullivan in her manuals, forms an important part of the exhibit; and the natural history charts in water colors, made by the girls of the normal school, show considerable ingenuity. Columbus has also exhibited a full line of water-color work in the high school and some wood carvings from the fifth grade, which seem to the writer unusually meritorious. The high school at Wapakoneta has prepared a creditable exhibit of native woods; and some fairly good written work comes from the smaller towns.

Indiana, like Massachusetts, has been singularly fortunate in the selection of a State superintendent of educational exhibits. The strength of the Indiana exhibit is due to two cities—Indianapolis and Laporte—although some of the counties make creditable showings. At Indianapolis there is a principle which underlies all the work of the primary grades; it is the coordination of all the school work in nature studies. The reading, the language, the drawing, the spelling, the form study all relate to the development and expression of thought in connection with elementary science. And there is a freedom and an excellence in all this written work that is delightful. Standard American literature is similarly treated in the grammar grades. Laporte does not take second rank in the quality of her work, although the method here is subjective rather than objective, as at Indianapolis. The development of social relationships is a great purpose with Dr. Hailmann, and he develops it admirably throughout the grades of his schools. Form study here, to some extent, takes the place of plants and animals as the center of thought development, although the objects in nature are used, and to great advantage, in much of his work. The social creative work with tiles and paper cutting applies very happily this idea of Dr. Hailmann's. In both the language and the drawing one is impressed with the work at Laporte as with that of Indianapolis in its spontaneity. There is little work below the high-school grades in technical grammar, but there is great clearness and freedom in all the written work. The counties of Indiana send pretty full exhibits. That of Wayne County is creditable in its language work, and that of Wabash is fairly good. One little district school—that of Miss Della Brown—makes a good showing for Marion County. The town of Hammond has uniformly fair work in language and drawing, with literature as the basis, and La Fayette, in her illustrated language work, makes a creditable display. South Bend, Richmond, and Terre Haute scarcely compare with the smaller towns above mentioned. Set questions and answers never test the character and quality of good work, and much of the written work from these towns consists of answers to examination questions. Mrs. Hailmann has a very full exhibit from her kindergarten training class in mat weaving, paper cutting, etc. A profitable feature of Mrs. May Wright Sewell's exhibit is the stenographic reports of lessons in her Classical School for Girls at Indianapolis, and these not revised. Purdue University makes a very large exhibit, especially in its mechanical departments. There students make not only the machinery used, but also the tools with which the machinery is made. There are also in the Indiana exhibit photographs and graphic charts from the State normal school and the State university.

Illinois has exhibited in her own State building, and the Cook County Normal School in the assembly room of the Children's Building. Chicago rightly takes a great part of the space of the educational exhibit. In drawing, the display is strong, but the uniform excellence of the entire exhibit can scarcely be compared with St. Paul and Minneapolis or the spontaneity with that of Indianapolis and Laporte. The language work of the primary grades is unequal, and there is great diversity in penmanship. The science work in the high schools, as manifested by the quality of the drawings and the character of the written work, seems very good, and there are some excellent eighth grade language papers, illustrated with pen drawings, especially those of the Franklin School. The high school work in language from Peoria seems proportionately better than that of the lower grades. Kewanee has a full line of work in elementary science from the first to the eighth grades. The work in elementary science and language from Aurora impressed the writer as being somewhat better than similar work from other towns, excepting, however, the Cook County Normal School. Galesburg sends several elaborate pieces of woodwork—a hatrack and a bureau—as the fruit of her manual training department. The Morris high school contributes an interesting collection of geological specimens representing the coal flora of Illinois. The model schoolroom, fitted up by the United States Furniture Company under the direction of State Superintendent



Raab, is interesting in representing the ideal of an experienced schoolman. The State normal schools both have large exhibits. That at Carbondale has a unique series of reading charts made by the pupil teachers; and the series of readers made for the use of the children in teaching fables, stories, and poems at Bloomington are equally original and interesting. The University of Illinois represents very fully all her departments, with emphasis upon the engineering courses; and the institutions for defective classes—the deaf, the dumb, the blind, and the feeble-minded—make an excellent showing.

The exhibit from the Cook County Normal School in the Children's Building is of great importance to the student of education, because it represents some of the newer lines of school work. The papers throughout are characterized by great freedom. They may be faulty in mechanism, but the thought to be expressed is not allowed to be stifled by mechanical forms. Nature study forms the basis of a large part of the language work, although literature, geography, and history are earlier introduced than in most schools. The child not only begins to draw in the lowest grades, but he begins as well to color his drawings, and these drawings and colorings are always made with the object in sight. There is much work with birds, and the work is good. Historic ornament in connection with teaching history furnishes some excellent papers. Some good illustrated number work comes from Mr. Giffin's department; and many of the maps exhibited by the geography classes are of a superior grade. One may find fault with the penmanship in the primary grades, which certainly is inferior to that of most school work from the cities, but if Colonel Parker succeeds in making rapid and legible writers in the higher grades this may be overlooked.

V. The three great States of the Northwest—Michigan, Wisconsin, and Minnesota—are all represented in the department of liberal arts. That of Michigan does not include some of the best schools of the State—Detroit, for instance; and the exhibit from Wisconsin is so unfortunately arranged that it does not do the schools of the State justice. The exhibit from Minnesota, on the contrary, is superb—one of the very best to be found, if not the best.

One-half of the Wisconsin exhibit comes from the city of Milwaukee, and a great portion of this display represents the work of the kindergartens and the teaching of German. Most of the geography work consists of answers to set questions. The language work of the primary grades, in some instances, is better than that of the grammar grades, and the Oral School for the Deaf submits some language papers that are very creditable. There are some good brush studies from copies made by the pupils in the Milwaukee high school. Racine has some special work in American authors that is quite good, and a number of the rural schools exhibit pretty full lines of their work. Downer College, of which Miss Sabin is president, has a good display of photographs, as have also Beloit and Ripon colleges. The State normal schools exhibit in alcove together; but their work, like that of the State in general, lacks good arrangement, and the placing of the color studies in some cases is unfortunate. The University of Wisconsin is represented by a goodly number of photographs and charts.

Michigan has a pretty large exhibit, but it does not represent a great number of schools. Some of the best work comes from Muskegon. One week's work in elementary science forms an interesting volume. There is from the same city some good illustrated number papers and a full line of kindergarten work. Some of the paper pulp maps from Bay City are skillfully made, and the illustrated language work of the sixth grade at Grand Haven is fairly well done. An interesting feature of the East Saginaw exhibit is a set of photographs including all the pupils and teachers. The English work from the Ann Arbor high school is good, and the physics note books show unusually fine applications of laboratory methods. The State normal school has a display of drawings, charts, and photographs, and the State agricultural college makes a very complete exhibit of all its departments, as does also the University of Michigan.



But the great educational exhibit from the Northwest comes from the State of Minnesota. Most of the cities of the State have sent full line of work; but the amount and excellence of the work from St. Paul and Minneapolis throw into the shade much very good work from outside of the twin cities. One who studies the work of St. Paul and Minneapolis in language and science, geography and history, arithmetic and drawing, manual training and domestic economy, is bound to conclude that these two cities have reached the highest mark of American education. The display of both cities is so strong that one is not inclined to determine which is the stronger. And it is not in one subject or two subjects that these cities excel, but in all the subjects that they pretend to teach. The excellence of the work is delightfully uniform. The work in language in both cities clusters about elementary science, literature, history, and geography, and drawing is always advantageously used to illustrate the written work. St. Paul exhibits in ten panels her system of manual training, and Minneapolis has several pieces of wood carving that are unexcelled. Stillwater also has a number of pieces of good wood carving. Winona sends a unique geographical cabinet, and Duluth some good relief maps. The State normal schools at Winona, St. Cloud, Morehead, and Mankato all make creditable exhibits, that of Winona being the largest and strongest. There is strength and freedom to the language and drawing work of these schools, characteristics which they share with Minneapolis, St. Paul, Duluth, Stillwater, Winona, and many of the good rural schools. Carleton College, St. Olaf College, Hamline College, and the University of Minnesota are all represented, chiefly by photographs. But the strength of the Minnesota exhibit rests almost wholly on the work of the primary and grammar grades.

VI. The exhibit from Missouri is large and on the whole excellent. Both in quantity and quality, the best part of it comes from the two large cities, St. Louis and Kansas City. The kindergarten display from St. Louis has many good features, as have the displays of primary and grammar grade work. There are many volumes of written work which are beautifully and substantially bound. One of the best features of the St. Louis exhibit is the illustrated language papers. There is freedom in expression, accuracy in mechanism, and beauty in execution throughout. Pen drawings are used in great numbers to illustrate written papers, and they are well used. There are many good exercises in history and biography in grades as low as the third and fourth. Elementary science receives considerable attention in the primary and grammar schools, and the papers and drawings from one of the colored schools seem better than those of a corresponding grade in one of the white schools. Both the colored and the white pupils make a good showing in high school work.

Kansas City makes an admirable showing in penmanship. In the first and second years, at least, it is better than in most other cities. This excellence is no doubt due to the fact that the child in Kansas City begins using pen and ink after he is in school four months. The illustrated language papers here, as in St. Louis, are unique and strong, especially in the sixth and seventh grades. There is also some good history work in the seventh year. The language work of the colored children in Kansas City in no instance approximates that of the white children. The State exhibit from Missouri is good because the exhibits from St. Louis and Kansas City are good. The State normal schools certainly make a very poor showing, their academic work being much below the grade of similar lines in the high schools of the two great cities.

The statistical charts and diagrams exhibited by Iowa are among the very best, and the state department has on file a complete set of its reports and other official documents. Sioux City has an exhibit that is interesting and rather unusual—phonographic records of work in reading, singing, geography, and number. The operator starts the machine and the visitor may hear a Sioux City recitation in any or all of these subjects. Clinton exhibits a good deal of illustrated language and number work, and some of it is good. Some of the geography charts from Cedar Falls

are well made. The language work from Des Moines (East) is perhaps the best submitted, in that freedom in the expression of thought is greater. The cooking exhibit from West Des Moines is very good. Several of the rural schools send full lines of photographs. The State normal school is represented by a good deal of homemade apparatus, drawings showing the development of the synthetic sound system, and some good written lessons in science.

Kansas has made two exhibits—one in her State building and one in the department of liberal arts. Topeka exhibits considerable work in technical grammar. Local geography, so called, is early introduced, and much of it is of a rather technical character. Writing is by pen and ink from the first, and the penmanship in consequence is excellent throughout. The best language work submitted from Topeka is that labeled "miscellaneous"—compositions on common things. Wichita has a pretty full exhibit of paper cutting and folding and designing, but the color combinations are scarcely more than fair. Some of the pictorial work in history is unique, the dates being supplanted by pictures on outline maps. Writing here, as in Topeka, is with pen and ink from the first, and the results in the first and second years are admirable. A good deal of the language work consists in writing from pictures cut from papers, with little effort on the part of the children to make their own illustrations. Lawrence has the best illustrated language work. The same city makes considerable use of free-hand drawing. Colored picture cards form the basis of language work at Leavenworth, with analyzing and diagraming of sentences as low as the fifth grade. The district schools of Greenwood and Doniphan counties make a fairly good showing in their written work. The State normal school of Kansas makes a good exhibit in its laboratory work in botany and homemade apparatus in physics. There are some clever stanzas of doggerel in the versification exercises and some ingenious charts and diagrams in the work in English literature. The exhibit of North American animals from the University of Kansas is large and excellent, and the agricultural college illustrates pretty fully the work in household economy and floriculture. The diagrams, showing the relative time given to each subject of study, are full and interesting. The Institution for the Education of the Deaf and Dumb at Olanthe exhibits some good written work, and some well-made harness from the industrial department.

The Nebraska exhibit, in size at least, does not equal the Kansas exhibit. Omaha, the largest city, sends no manuscript work, but a pretty full line of drawing and manual training. Nebraska City has some pretty good language work, and Kearney some well-prepared music exercises in the tonic sol-fa. Beatrice has a number of photographs illustrating the outdoor gymnastic exercises of the pupils. The elementary botany and the drawings from Crete are for the most part good. Pawnee has made a valuable collection of the woods and vines of Nebraska and mounted these for teaching purposes. The girls of the Scribner high school have made a pretty silk map of the State, and a good drawing of the Mason School, Omaha, on a marble slab, comes from one of the grammar grade boys of that city. The University of Nebraska is represented by photographs. While there is considerable good work from Nebraska, too much of it consists of answers to set questions, and such answers never show to advantage the written work of the schools.

VII. The Rocky Mountain States exhibiting school work at the Fair are the Dakotas, Montana, Utah, New Mexico, and Colorado. North Dakota did not send a large exhibit, but the wonder is that a State so new should have sent any. There are a large number of photographs of town and district schools, considerable paper cutting, folding, and weaving, and some good pen drawings. South Dakota's exhibit is somewhat larger. It includes maps showing the school lands and buildings and a good separate exhibit of the country schools. The language work in these schools is mostly confined to exercises in technical grammar. Sioux Falls makes the fullest exhibit. Aberdeen exhibits the first schoolhouse (in miniature) built in South Dakota. The University of Dakota has a number of photographs and a type-written history of the institution.



Excepting Washington, Montana has the fullest exhibit of the new States. The Helena schools have a pretty good line of pictorial language work with fables as the basis. The slates of the school children of Anaconda, containing daily exercises, have been photographed. Stevensville has sent a large papier-maché map of Montana. Butte shows good muscular movement penmanship exercises. The exhibit from Utah occupies three small alcoves, and is classified into city schools, rural schools, and colleges. The best work from Salt Lake City is the drawing, with several good pieces of sixth-year language work. The exhibit from the rural schools shows better penmanship throughout than one finds in similar schools of other States. The Agricultural College and the University of Utah are both represented in the exhibit by photographs and written work. Far-off New Mexico, with less than 600 teachers, makes an exhibit. East Las Vegas has prepared a history of educational work in that section covering the period of the beginnings of the mission fathers down to the present, and illustrated it with photographs. It is a commendable effort to place in permanent form the labors of pioneers. Silver City has some relief maps that are not without credit, Albuquerque photographs and written work, and Raton has shipped some of her blackboards with the pupils' drawings thereon.

But the pride of the Rocky Mountains—of the country, for that matter—is Colorado. Her exhibit, like that of Minnesota, has been arranged with great taste, and the white and gold of the woodwork give it a pleasing setting. The state department has sent complete samples of the records and publications. The relief map of Pike's Peak and vicinity, which is a creditable piece of workmanship, was made by the science department of the Colorado Springs high school. The same city sends a model of her high school, and a most suggestive piece of geographical apparatus, "an Indian camp," the work of a third-year class. Denver—or more properly speaking, the Denvers—has the largest and best part of the exhibit. The work is strong along several lines, notably drawing and music. And Denver offers something strikingly new in the way of exhibits—stenographic reports of the regular school exercises and phonographic records of the work in music, including singing at sight, the only such exercise to be found among the exhibits. The stenographers have faithfully reproduced the regular lessons given in the Denver schools, and these reproductions reflect great credit on Superintendent Grove and his associates. The library feature of the Denver high school is a departure that is likely to be followed by many other cities. Some of the manual training work from Pueblo schools is good. The State normal school at Greeley makes an excellent showing in the exhibit of its regular work. Science is made prominent, and solid woodwork is exhibited from all grades. The illustrated language papers throughout are good, and the tonic sol-fa exercises show what is being done in music. The School of Mines and the Agricultural College are both represented in the exhibit. Taken altogether, the exhibit from Colorado shows what intelligence and money will do to build up a system of schools in a comparatively brief period of time.

VIII. Persons familiar with the excellence of the California schools are not a little disappointed to find that the best educational exhibit from the Pacific Coast comes from the new State of Washington. Two reasons may be given for this failure of the Golden State to meet the expectation of her friends: First, the bad arrangement of the work sent; and second, the absence of school work from San Francisco and several other of the larger cities. The work was placed in the California Building because of the appropriation, which made it possible to make the exhibit. \* \* \* San Francisco sent nothing. Los Angeles nothing but a few pieces of drawing. Neither Sacramento nor Stockton sent any school work. The exhibit from Oakland is the largest and the best. It compares favorably with the work of Eastern cities. The drawing is an attractive feature, being especially strong in historic ornament, with a good sequence of industrial drawing. The language and science papers throughout are well written and well illustrated, and the physiology papers from the



grammar grades have attracted a good deal of attention. The high school work in English is good, and there are some unique class book designs which would do credit to our best comic journals.

Nowhere in the exhibit is there better work from a village school than that sent from Temescal. It is strong throughout and shows correlation and intelligent application of modern educational theories. The language work is by all odds the best from California; and the nature studies, the water-color sketches, and the arithmetic papers are very good. Pasadena sends some good work in elementary science and grammar grade English, and Pomona has some neatly illustrated papers in literature. The language lessons written from pictures in the district schools of Humboldt County are good, as are those on bees from Monterey County. The spontaneous drawings from Napa are exceedingly suggestive, and Sonoma County makes a very full and creditable exhibit. The music from San Diego is very good, and the compositions on musical themes excellent. The elementary science work is technical, but the history papers from the high school show careful work in that subject. American literature is the basis of some good illustrated language work from the grammar grades of National City. The State normal school at San Jose and the Cogswell Manual Training School at San Francisco show excellent results in manual training and related subjects. Mrs. Cooper sends some pretty nature studies in water colors and some interesting spontaneous drawings, and the Silver Street Kindergarten an excellent series of drawing, illustrating "Seven Little Sisters." The Leland Stanford Junior University and the University of California exhibit photographs of their buildings. The statistical charts from the different counties give a good deal of important data, and there are many relief maps from California, some of them good and many of them bad. The district schools of California make a better showing than the city schools.

The children of Oregon paid for the State exhibit by penny collections. The Portland high school sends the notebooks of the pupils in physics and chemistry. Roseburg has some ingenious historical maps and some botanical work which is largely technical. Astoria aims to give language training by means of technical grammar, but the results are not flattering. Mental arithmetic is studied in the schools of Portland and at the Willamette University. There is a good deal of map work from Oregon, but it is chiefly in outline.

Washington has made a very pretty exhibit, and the three large cities—Seattle, Tacoma, and Spokane—have all sent their best work. It has a good place in the Washington State building and is artistically arranged. Form study is given great prominence in the Seattle exhibit. There is considerable work in reading and diacritical marks. There is science work in all the lower grades, and it is intelligently developed. The history papers from the eighth grade are good, and the zoology papers in the high school are neatly illustrated with pen drawings. The geography work would be stronger if so much energy had not been expended on the details of outline maps. Infinite prettiness is a fault of the map work at Tacoma, too. But Tacoma has some good object and physiological drawings, and the language work above the primary grades is good. The high school work in geometry, physics, and chemistry shows strength. There are some neatly developed botany lessons, and the primary reading is better illustrated than the primary language. Spokane has not been outdone by Seattle and Tacoma in the display of good work. Her wood carving is the best from the Pacific Coast, to except, perhaps, that of the Cogswell Manual Training School. The language work is not strong, but the modeled fruits are quite natural and prettily colored. The model of the ship *Santa Maria*, by the pupils of the high school, is a splendid piece of work. The exhibit from Olympia is extensive, but it does not approach that of the three cities already named. The best county school exhibit from Washington is that of Whitman County. Pullman, Colfax, and several other of the smaller towns send a good deal of written work, and some of it is good.

The Catholics of the United States, England, and France have made a very large educational exhibit—too large in quantity for purposes of study, the same lines of work being duplicated over and over. Needle and art work constitute a very large part of the exhibit. The former bears evidence of great skill, but the latter does not take high rank as art work, the works being too often copies and these stiff and mechanical. Most of the teaching orders of both men and women, representing every grade of instruction, exhibit their work, that of the Brothers of the Christian Schools and the Sisters of Notre Dame taking highest rank. If the blessed John Baptist de la Salle could know the widespread influence of his teachings, and the reverent consideration of his memory at this time, he would indeed realize that his great life work had not been in vain. The Brothers of the Christian Schools exhibit some very good work, more especially in English. The altar constructed by the pupils of the St. Joseph's Orphan Home, Columbus, Ohio, is a fine piece of work in manual training. St. Benedict Academy, Chicago, submits some excellent pen drawings, as does also the Institute of Our Lady at Longwood. For 13-year old boys, the plumbing sent by St. Francis Industrial School at Eddington, Pa., is very superior. It is interesting to find in the Catholic educational exhibit the introduction of elementary science in the lower grades. The St. James and the St. Stanislaus schools, Chicago, have done some creditable work in this line. In the exhibit of the Diocese of Covington, Ky., one finds a number of pieces of creditable water-color paintings. Some well-written compositions come from Manhattan College, New York, and the history charts made at the Ursuline Academy, Pittsburg, show considerable ingenuity. The needlework throughout the Catholic exhibit is excellent; it is one of the strongest features of the exhibit. The garments from the Colored Industrial Institute, Pine Bluff, Ark., are well made. Rock Hill College, Maryland, makes an interesting collection of woods, and the schools of Philadelphia show good wood carvings.

Manual training is a prominent feature of every department of the world's educational exhibits. From kindergarten to college, inclusive, one finds this new form of mental training. Tool instruction, including carpentry, pattern making, wood turning and carving, forge work, and domestic science, take their rank with language, history, mathematics, and the other subjects of intellectual development and discipline. Most of the cities have exhibited their manual training in connection with their other lines; but a few, including several private schools, have made separate exhibits. These will be considered here. The Chicago Manual Training School makes one of the best exhibits. Its work, like that of Pratt Institute, is uniformly excellent. Some of the original sketches, as well as the work in perspective and shadows, approaches the standard of the best art schools. There is also good work in wood and iron. The Toledo Manual Training School exhibits the work of girls as well as of boys, and the girls in some instances show greater skill than the boys. The tools used by the pupils are tempered by themselves. Some good wood carving comes from this school and the cookbooks exhibited are interesting. The St. Louis Manual Training School exhibits joinery and wood turning from the first year; forging, pattern making, and molding from the second year; and machine work from the third year. All this work, as well as the accompanying drawings, takes high rank. The Baltimore Manual Training School has work in wood, brass, iron, and tin, as well as outline maps and water colors. The Technical School of Cincinnati has some free-hand drawings with pen and some illustrated papers in American literature that compare favorably with the best high school work. The New York Trade School exhibits its work in plumbing, stonecutting, sign painting, job printing, and enamel gilding. The Jewish Trade School, Chicago, has work in wood, clay, and cloth, but it is not as strong as that in the schools mentioned above. J. Liberty Tadd, of Philadelphia, illustrates his method of drawing and manual training for psychological and physiological development. These large manual training exhibits—and most of them from free schools—show how fully skill in handicraft is appreciated by



the people; and all this appreciation and development has taken place since the world's educational exhibits at Philadelphia in 1876.

X. The education of defective classes is now claiming its share of attention, and the State is recognizing that the deaf and blind and feeble-minded have claims upon it for training not to be exceeded by the claims of normal children. The exhibits which these three classes make at Chicago have special interest for the students of education, since the methods employed in teaching defective classes admit of better representation than the methods employed in teaching normal children. Twenty-five schools are represented in the collective exhibit of institutions for the education of the deaf. These for the most part are State institutions. The National College at Washington, the only higher institution for the deaf in the world, has a good display of photographs. The woodwork from Michigan is among the best. All of these schools employ manual training methods, chiefly for the purpose of teaching trades. The finished products in the way of bookcases, shoes, harness, and needlework show great skill on the part of these students. Most of the schools for the deaf combine the manual with the oral method; although it is evident that the oral method is in the ascendancy and the day is not distant when all these institutions will teach the deaf to talk and to read lips. The McCowen Oral School, Chicago, shows some good results in this departure. Its pupils range in age from 4 to 13, and they not only use the voice well, but the work exhibited in elementary science, sloyd, drawing, and kindergarten, compares favorably with the best primary schools for hearing children. The Home for the Training in Speech for Deaf Children, Philadelphia, sent 20 children, ranging in age from 4 to 7, to Chicago, during the Exposition. It is the purpose of this school to prepare deaf children for the public schools and present results fully justify the expectation. The Volta Bureau at Washington exhibits 75 volumes of its publications which are valuable contributions to educational literature. This bureau, through the munificence of Alexander Graham Bell, is doing a great and good work in promoting the teaching of speech to the deaf.

Nine State institutions for the education of the blind exhibit collectively. These schools, like those for the deaf, aim not only to give academical instruction, but to teach useful trades. For many years broom making constituted the chief line of industrial work, but it is pleasant to note that piano tuning and other higher forms of mechanical work have been opened up to the blind. Illinois makes a good exhibit in sloyd and hammock making; Colorado, in kindergarten work; Pennsylvania, the largest of the State exhibits, in language and geography; Wisconsin, in clay modeling and domestic economy; Indiana, in carpet weaving and chair caning. The Perkins Institution, the oldest \* \* \* of these institutions, has a fine display of kindergarten and sloyd work. Most of these schools begin with kindergarten methods, and music and industrial work receive considerable attention.

Institutions for the education of feeble-minded children have brought relief to thousands of afflicted families all over the country; and 13 of these schools (11 State and 2 private) exhibit at Chicago. Of the defective classes, the feeble-minded are the least susceptible to education; and yet the drawings, compositions, maps, needlework, and carvings show great possibilities for even the imbecile classes. The ethnological charts regarding feeble-minded children in the school at Elwyn, Pa., are remarkably suggestive, as are also the photographs and studies of family types from the school at Faribault, Minn. Indiana has some neat china painting and a cherry cabinet that is well made; California, wood carving; Kentucky, mattresses; Iowa, shoes and inlaid woodwork; New Jersey, hammocks; Minnesota, repoussé work; Pennsylvania, torchon lace; Massachusetts, number work that is remarkable for children who have been in school but one year; and Connecticut has some kindergarten work that would do credit to the pupils of a sane school. These schools are doing a splendid educational work for hundreds capable of improvement, as well as providing care and comfort for such as can not be improved.



XI. The schools for the education of dependent and criminal classes exhibit in the Anthropological Building. The South End Industrial School, Boston, in which Edward Everett Hale has been so much interested, displays its lines of sewing, sloyd, and drawing. Various aid societies and fresh-air societies exhibit by photographs and charts. The Boston Children's Aid Society fully illustrates its home library feature—an admirable feature, by the way—of this educational work for dependent children. The Hebrew Technical School, New York, to which Felix Adler has given so much intelligent support, has some very good wood carvings, and some creditable notebooks and pieces of physical apparatus are displayed. Caring for dependent children is not new in this country; but giving this care an educational bias is. So that a meager display from these schools is not to be wondered at.

The schools for reformatory or criminal classes exhibit pretty generally. \* \* \* The illustrated work in language and elementary science of the Lyman School for boys at Westboro, Mass., certainly shows that the methods employed in teaching are modern, and there is some good designing in colored papers, and some good pieces of wood carving. The New York Industrial School at Rochester makes the largest exhibit. Along lines in which trades are taught—domestic economy, shoe-making, carpentry, etc.—the work exhibited is of a high grade; but along the purely literary lines it is much below that of the Lyman School. Some of the grain-ing in wood is excellent, and the display includes an excellent model of the laundry made by the pupils. The Illinois school of agriculture and manual training for boys, at Glenwood, does well in its wood carving and written work. The New York House of Refuge at Randall's Island, which provides for the instruction and care of the juvenile offenders of New York and Kings counties, has some creditable objective work. The Pennsylvania Reform School at Morganza has a good deal of map work and the Girl's Industrial Home at Delaware, Ohio, a good deal of sewing.

The negro is well represented in the educational exhibit, not only in the State exhibits but in the special exhibits. Hampton Institute, Virginia, makes the best showing in regard to both negroes and Indians. The work throughout is praiseworthy when one considers the limited means of this institution and the great numbers that it yearly instructs. One of the purposes of this school is to teach the red man and the colored man useful trades—printing, blacksmithing, wheelwrighting, shoemaking, and tailoring, and the finished articles exhibited are uniformly well done. Many of the teachers in the colored schools of the South are trained at Hampton, and an interesting feature of the exhibit is the work of the normal classes. In the collective educational exhibit of the Freedman's Aid Society, three institutions are represented by school work—Claflin University at Orangeburg, S. C.; Clark University, Atlanta, Ga.; and Central Tennessee College at Nashville. These schools are not, as their names would indicate, higher institutions of learning, but, chiefly, schools of primary and secondary grade. The pupils represented range in age from 6 to 30 years, and the subjects include primary number, language, reading, the sciences, pharmacy, biology, and theology. Atlanta University, Georgia, and Wilberforce University, Ohio, each make separate exhibits. Both cover a wide range of subjects with emphasis on the manual training both for purposes of trades and development of skill.

The Carlisle Indian School, Pennsylvania, exhibits in the Liberal Arts Building, and 52 other schools in the United States Indian Building. The work from Carlisle is certainly good, due in part to the fact that it is one of the oldest, but chiefly because it has enjoyed the continuous superintendence of Captain Pratt. Drawing and music form a part of this exhibit; and the language papers, if not always elegant, are always interesting. The garments made and the wagons built by these Indian girls and boys are surprisingly meritorious. Fifty-two of the Government Indian schools exhibit collectively. The best work from Genoa, Nebr., is in printing and harness making; Rensselaer, Ind., blacksmithing; Fort Yuma, Cal., two

models of schoolhouses; Green Bay Agency, Wis., written work; Grand Junction, Colo., and Albuquerque, N. Mex., letter writing; Pima Agency, Ariz., penmanship; Klamath, Oreg., colored drawings; and Chilocco, Okla., illustrated language. During the Exposition 7 schools have, at different periods, held forth with 30 pupils each, and illustrated their methods by actual teaching in the United States Indian School Building, where the school work of the Indian children is displayed. These schools have been from Albuquerque, N. Mex.; Rensselaer, Ind.; Lincoln, Nebr.; Lawrence, Kans.; Genoa, Nebr.; Chilocco, Okla., and Osage, Okla. The Indian school work from the Northwest Territories, which in some respects is better than our own, will be mentioned in connection with the account of the Canadian exhibit, of which it is a part.

XII. Those who remember the excellence of the Canadian educational exhibit at the Philadelphia Centennial, 1876, are not a little disappointed with the present display at Chicago. It lacks plan in preparation, and is not well arranged; and, to except some work from Hamilton and Kingston, the Ontario exhibit—which should have been the best—is weak. The great city of Toronto, with its excellent public schools, is not represented; and an entire alcove, which should have been placed at the disposal of Inspector Hughes, is given over to so-called art colleges; and these display no strong, but many weak pictures. The best work in the Ontario exhibit comes from Hamilton; and the correlation of elementary science, language, and drawing is excellent. The drawing here is better than elsewhere in the Canadian Provinces, although their drawing in Canada is much inferior to our own. The primary work from Hamilton is the best. Milton and Kingston both exhibit labored designs, which are scarcely more than mediocre. They are for the most part copies, but weak at that. But the Kingston schools exhibit one line of strong work—vertical writing—from the third, fourth, and fifth grades. It is uniformly better than the oblique writing of corresponding grades in other schools. A great number of art colleges exhibit water and oil paintings, charcoals, clay models, etc., but the work is very commonplace. The Institution for the Education of the Blind at Brantford exhibits some pieces of willow and cane work that are good, as well as some good sewing and kindergarten work. The Institution for the Education of the Deaf at Belleville, and that for the Education of Feeble Minded at Orillea, both show to what extent manual training is employed in giving skill to the deaf and the imbecile juveniles of Ontario.

The Province of Quebec makes a fuller and in some respects a better exhibit than Ontario. The penmanship throughout is good, but the language teaching for the most part mechanical. Religious instruction, and this of a rather formal character, is emphasized in the written work. There are some fairly good drawings from objects from the Montreal Model School and the Laval Normal School. Typewriting and stenography are important branches in the secondary schools of Canada. The classical colleges of Quebec make a full exhibit of their notebooks in English, French, Latin, and Greek. The Institution for the Education of the Deaf, in which the oral method is chiefly employed, shows good results in composition and language. The students in the blind institution do some good cane and needle work. A great number of religious teaching orders exhibit from the Province of Quebec. The Ursulines of Stanstead have a good deal of written work; the Sisters of the Good Shepherd, needle and china work; Clerics of St. Viator, pen drawing; Sisters of the Holy Cross, herbariums; Sisters of St. Anne, water colors, and Sisters of Jesus-Marie, copious notes on written work. The Institute of the Congregation of Notre Dame has the best school work of the religious orders. Their language and elementary science work have broader foundations and follow more closely scientific methods. A number of the male teaching orders make exhibits. The Brothers of the Christian schools display some exercises in penmanship that look very like copper-plate.



Of the four Canadian Provinces exhibiting, that of Nova Scotia is the smallest. The provincial normal school at Truro has a number of drawings that are pretty, but most of them are copies. Halifax displays clay and kindergarten work, and one of the church schools for girls some water colors that are fair. There is a good educational map of Nova Scotia, showing the location of every schoolhouse in the Province.

Considering their isolation, the Northwest Territories make an altogether creditable exhibit, and show that they are really trying to keep step with general progress. The language work from Regina is good; so are the reproductions from Whitewood. The most interesting feature of the exhibit is the work from Indian schools. The Northwest Territories are providing educational facilities for the offspring of the aborigines. The industrial work—printing, shoemaking, sewing, weaving, etc.—as well as the work in language and penmanship, compares favorably with the better Indian schools in the United States. Ten pupils from one of these schools, under the direction of the Gray Nuns, were brought to Chicago, and illustrate their methods of work. There are four of these industrial schools in the Northwest Territories, under the direction of Gray Nuns.

XIII. The French colonies at Guadeloupe and Martinique, West Indies, and French Guiana, South America, made small and unimportant educational exhibits. The exercise books of the pupils of Martinique had been laboriously corrected by the teachers; and the exercises from the village schools seemed better than those of the town schools. The best work from Guadeloupe was the fancy needlework. The work from French Guiana is interesting because it represents largely the children of convicts. The needle and feather work both were good, and there were some excellent pieces of penmanship from the school of the Sisters of St. Joseph. These schools exhibit in the French Colonies buildings.

Mexico does not make an important exhibit, although in penmanship and pen drawing she is scarcely excelled. The school for the blind makes an exhibit of industrial work that is interesting. The pupils in the school at Pueblo exhibit their industrial work, chiefly in Mexican onyx, and the exhibit is pretty if not strictly educational. The pen portraits and penmanship throughout the exhibit are fine. But one would prefer to see handwriting no better than that of Horace Greeley and have training in thought development than have this fine writing with few evidences of training in intellectual power. The Mexican exhibit contains a pretty complete set of the text-books used in the schools.

Besides the exhibit from French Guiana, three of the South American republics send school work—Brazil, Uruguay, and Argentine Republic. \* \* \* Rio Janeiro occupies the best part of the space [devoted to Brazil] with exercise books, which show the subjects pursued in the schools. There is a good deal of drawing, but it is for the most part crude. The drawings with colored pencils seem better than the drawings in black and white. A large number of outline maps are exhibited. The great amount of work is mat weaving and colored papers indicates to what extent kindergarten methods are employed in the primary schools. Like Mexico, Brazil pupils excel in pen drawings. Maps, charts, and photographs form an important feature of the exhibit. The devotion of the Brazilians to their educational leaders is indicated by the fact that in the exhibit one finds a fine bust and an excellent portrait of the first minister of public instruction, Señor Benjamin Constant.

The Republic of Uruguay makes a very good educational exhibit in the Agricultural Building. It includes not only a great deal of written work of the pupils, but as well samples of blackboards, desks, and other teaching appurtenances and appliances. The language exercises seem better than those in the Brazilian schools, and the penmanship throughout is excellent. There is scarcely any work submitted in drawing, to except outline maps, and these are good. Full sets of photographs illustrate the students at work in the normal school. The Pedagogical Museum and Library at Montevideo is doing a great and good work for the professional training



of teachers, and Dr. Ruano, who has been the moving spirit in this—and at present its director—accompanied the exhibit to Chicago. Among the models exhibited by this museum was one of a rural schoolhouse at Bañado, with a photograph of the tule structure which it supplanted. In all, the Uruguay exhibit contains nearly eight hundred pieces of school work.

Had the Argentine Republic been given proper space her educational exhibit would have doubtless made by far the best showing from South America; but it was crowded into one small, dark alcove on the ground floor of the Manufactures Building, and much of it could not even be unpacked for the want of space. Señor Carlos Gallardo, who was in charge, made the best of this bad management on the part of the Exposition authorities, and did all in his power to unpack and place in view the work from his schools whenever those sufficiently interested in the matter asked to see the school work from his country. But his space was so very meager that only a very small part of the work could be unpacked at any one time. Like Uruguay, the Argentine Republic sent samples of the desks used in the schools. There were also full sets of reports of the department of education, as well as files of the educational journals, and these neatly bound. Another feature of the exhibit was the display of professional books—those which the teachers are required to read—and not a few of these were translations from American pedagogical writers—Drs. Harris, Hailmann, Calkins, Sheldon, etc. At least a half dozen of the International Educational Series, edited by Dr. Harris and published by the Appletons, have been translated for the use of the Argentine teachers. It is evident from the exhibit that this country has taken hold of the normal school problem with great earnestness and intelligence. The manual training problem is also being solved, as well as the kindergarten problem, and both are represented in the exhibit. Natural history as the basis of language work, so new even in the United States, already has some advocates in the Argentine Republic, and the papers and drawings submitted are not poor. The relief maps are certainly better than those made by the pupils in the German schools, or in most schools in North America. Writing from pictures is a means of language teaching in many of the schools. The National College of Argentine, the normal schools, the orphan schools, and the night schools all show their distinctive lines by means of exercise books, maps, and photographs.

XIV. Two words characterize the Swedish educational exhibit, sloid and gymnastics. And yet when one studies the programmes of the Swedish schools he finds that in the former from two to six hours a week are given, and in the latter even less. Sweden made her educational exhibit in her own buildings; it was not extensive or varied, but it contained some lines that were interesting and unusual. Sloid work from every grade of school shows to what extent this form of manual training is utilized as a means of developing the mental and the physical powers of the child. It is encouraging to note in this exhibit that drawing is becoming more and more an adjunct of sloid. The embossed and engraved metal work, as well as the wood carvings, from the technical schools, show skill and art instinct. The architectural drawings, too, are good, and there are a great number of pictorial charts used in teaching geography. Text-books used in the schools and models of buildings for school purposes add to the value of the exhibit. The large display of home sloid indicates to what extent this handiwork is touching the fathers and the mothers as well as the children of Sweden. The school in weaving at Norrköping makes a highly creditable display of rugs, mats, portieres, etc., and the model of the Royal Gymnasium for Teachers gives an excellent idea of the equipment of these institutions. The Upsala University exhibits only a few rock sections used for petrological examination. The strongest feature of the Swedish exhibit is the system of teaching sloid to girls, under the direction of Miss Hulda Lundin. The work exhibited is done by girls ranging in age from 7 to 14 years, and the time devoted to this work is two hours a week in the first grade; four hours in the second, third, and fourth grades; five hours in the fifth and sixth grades, and six hours in the seventh grade.

The course includes plain knitting, purl and stocking knitting, patching, darning, and garment making. Throughout the sewing work the girls are taught to take measurements and to make patterns. The exercises are progressive, and the garments made testify to the value of the method. Miss Lundin has two objects in view in her girls' sloyd—to make it an educational medium, and to fit the girls for practical life; and it would seem from her exhibit of the Stockholm work that she is succeeding admirably.

The British Islanders are represented only by the London board schools. This exhibit is a large and in some respects an important one. It has three strong features—the vertical writing, the designing in colored papers, and the laundry work. London has taken hold of the penmanship problem with great earnestness, and, in the opinion of the author, she has solved it very satisfactorily by the adoption of vertical writing. There is something harmonious, and to the eye satisfying, about the designing of these schools in colored papers. The colors harmonize, and the forms impress, as so much similar work from the schools of the American States do not. In London, laundry work is added to the course in manual training. There is a good deal of wood carving and modeling, and some of it is excellent. The weaving of baskets and mats with willow splints is another form of manual training that one does not find in other exhibits. A feature of the London board school exhibit that strikes the American as a trifle antiquated is the great number and variety of medals and rewards of merit given for excellence in scholarship, punctuality, and good conduct. A number of cabinets illustrating the aids used in teaching elementary science are exhibited.

XV. Germany sent the largest foreign educational exhibit to Chicago. It included every grade of school work, and was as complex in character as only Germany could have made it. In the matter of teaching appliances, Germany's exhibit exceeded all the others combined; but a good deal of this apparatus was of a markedly mechanical style. A German teacher, for instance, works out a series of plant lessons with his own class. The children study the plants and draw them from nature. The idea is a capital one, and said German teacher forthwith issues a long series of charts—plates of his own drawings. These are to be used by other teachers; these pictures studied; these drawings copied; the spirit and method of the original teacher lost in this complicated piece of apparatus. What is true of this series of plant lessons is true of a great amount of the appliances for teaching found in the German exhibit. The written work throughout, judged by mechanical standards, is excellent, but it lacks the spontaneity of similar work from the schools of the American States. The penmanship, the spelling, punctuation, and order of words is sometimes painfully uniform. One feature of the German exhibit that surprised the American inspector was the evident attention given to the secondary education of women. The city high schools for girls (*Höhere Mädchenschulen*) made exceedingly creditable displays. The exercise books, the apparatus and text-books used, the drawings and lines of industrial work all testified that the higher education of women was also being worked out in that country. Several models of school baths were novel features—novel to American teachers, at least—of the exhibit. The relief maps of the pupils, made of paper and pasteboard, as well as the product maps, were decidedly inferior to most of those exhibited by the United States. More and better helps for teaching geography were exhibited by Germany than any other country, but the pictures in the illustrated books were inferior to our own. The manual training throughout was good, that from Berlin and Görlitz being best. There was some wood carving by very young boys that showed great skill.

The model showing the internal equipment of the King Frederick William Gymnasium at Berlin was the best model exhibited, to except that of the Royal Gymnasium in Sweden. For some reason the work in English of the girls in the *Höhere Mädchenschulen* was throughout better than that of the boys in the Real Gymnasium and Realschule. There was a good collection of pedagogical books exhibited, as well



as busts of some great educators—Fichte, Luther, Rousseau, et al. The institutions for the education of deaf and blind and feeble-minded all made large exhibits, illustrating their methods and purpose. The universities of Germany, the strongest in the world, very fittingly stood most prominent in the exhibit. Every department of these higher institutions—physics, chemistry, mathematics, letters—was represented by large collections of teaching appliances and books. Even the swords (schläger) used by the students were exhibited. One is deeply impressed with the weight of system in studying the German exhibit. The genius of the Yankee and the fine artistic sense of the French mind are nowhere apparent; but everywhere is to be found perfection of details, fidelity to order, and painstaking execution.

In the matter of size the Russian educational exhibit ranked next to the German; and, like the German exhibit, it emphasized the machinery of a system rather than the actual results of the system. That the exhibit might be the better understood, the Russian department of education had printed and distributed a number of pamphlets in the English language, and these were of great value to the students of the exhibit. Schools for special classes, rather than schools for the masses, were represented in the Russian display. The deaf and dumb and blind, the foundling home, the orphan asylum, technical, art, and railway schools constituted the bulk of the work sent to Chicago. In the matter of manual training Russia yet leads the world, as was evidenced by the exhibits in woodwork from the pupils of the seminary for village teachers and the imperial schools for the deaf and dumb. The uniforms for the Cossacks, made by the pupils in the institution for the education of orphans, and the needlework, from the imperial institutes for girls, showed unusual skill. Utility with them is doubtless emphasized more than with us; but the fact, nevertheless, remains true that Russia has more lessons in manual training to teach us. Some of the drawing and sketching from the Girls' Gymnasium at Moscow was strong; but much of the art work from the Central School of Design was mediocre—too much of it being mere copy work. The drawing schools of the Imperial Society for Promoting Art made a very full and very creditable exhibit of wood carving, bronze sculpturing, and China painting. There are in Russia railway schools and shipping schools and navigation schools, and these all exhibited. It is not a matter of accident or apprenticeship that a man becomes a railway engineer in Russia; he must fit himself by a careful course of training in the railway schools provided by the Government. Perhaps the most interesting feature of the Russian display was the exhibit of the Pedagogic Museum, the largest in the world. In pedagogical books and pamphlets alone this museum has over 70,000 titles; and President G. Stanley Hall is authority for the statement that he saw a greater collection of teaching appliances there than he had seen anywhere else in the world. The exhibit of the Pedagogic Museum at Chicago consisted chiefly of apparatus of all sorts, from a soldier's uniform down to a numeral frame. While the Russian educational exhibit was large and varied and interesting, it was all too evident that popular education receives little attention, and that the big display represented the work of a few special and privileged schools.

XVI. It is not too much to say that the educational exhibit from Egypt was a pleasant surprise to everyone who examined it. The work throughout seemed good, and all the different lines were well represented. The Arabic text-books, the slates, reed pens, and other teaching appliances, as well as the written work of the pupils, were displayed. The different editions of the Koran used in the various grades of schools were in the text-book exhibit. Manual training is given great prominence, and the inlaid woodwork was the best at Chicago. The notebooks of the students in physics, chemistry, and geometry were exhibited, and, as far as the writer could see, they equaled the work done in the better secondary schools in America. The modern languages are largely studied in the Egyptian schools, and the English compositions were exceedingly interesting. It was noted that when an Arabian youth was given a composition in English to write he was always



given an English theme—a scene, an incident, a story with an English background. This may have been mere accident, but there is a principle underlying it that deserves the attention of modern-language teachers. The drawings from the Egyptian schools, especially the mechanical drawings, light and shade, were excellent. Whenever color was used in drawing it was well used. The drawings from life, of the secondary schools, were not as good as those from the French lycées, but they were better than those of our high schools. The polytechnic school at Cairo made a large and creditable exhibit of work in wood and iron and mechanical drawing. There can be no doubt that France has exerted a most wholesome influence over the schools of Egypt, for the methods and lines of work are largely those of the French schools.

A dozen or more towns about the Mediterranean in Europe, Asia, and Africa were represented in the educational exhibit of the Alliance Israélite Universelle. This organization is benevolent and not political in its aim; it seeks to provide educational facilities to Jewish people in countries where they are still denied civil and religious liberty and to extend aid to those who suffer socially and politically by reason of their being Jews. Education is the sole work of the alliance, and its pupils are the children of the poor and ignorant. Among the cities exhibiting at Chicago were Tunis, Smyrna, Jerusalem, Yafa, Damascus, Constantinople, Bagdad, Salonica, and Adrianople; and a half dozen different languages—French, German, English, Hebrew, Arabic, and Greek—would be required to properly interpret the written work of these Jewish children. Manual training and agriculture are important subjects of study, the girls being taught housework and needlework and the boys trades and farming. Many of these schools show great skill in handiwork, among the good pieces of work in the exhibit being a model wardrobe from Constantinople, bath tubs from Tunis, copper ware from Jerusalem, rugs from Damascus, harness from Smyrna, and shoes from Adrianople. Some of the illustrated language papers from the school at Smyrna are very creditable. The Yafa agricultural school has a large exhibit of oils, seeds, and wines. Some of the maps of these schools are so inaccurate as to be amusing, but on the whole the work is good. And when one recalls that over 13,000 poor children, who would otherwise receive no school training, are annually taught in these schools supported by benevolent Hebrews, the exhibit, even though it should be less meritorious than it is, would be entitled to praise.

To except the Hebrew schools in western Asia, Japan is the only country of the Orient represented in the educational exhibit; but the Japanese have made a large and a good exhibit. The primary schools are represented by kindergarten work, clay modeling, and drawings; the secondary schools by the text-books and apparatus used, manual training, and written papers; the normal schools by photographs, woodwork, and drawings from nature; and the musical, commercial, and agricultural schools each show their distinctive lines of work. One is impressed with the series and gradation of Japanese schools. There are a good many drawings from the different classes of schools, but more drawings from copies than one would expect. The color work throughout admirably illustrates the Japanese ideal. The free-hand drawings from both the girls' and the boys' high schools are good. The institutions for the education of the deaf and blind make a good showing in wood carving and embroidery. The ungraded schools have exhibited collectively their industrial work, chiefly garments. The English work in the higher institutions is interesting. A recently published book is selected, and the chapters are assigned to different members of the class for translation. The Japanese idea of English composition must be very large. One such composition examined by the writer contained 118 closely written pages of letter paper, and another 190 pages. The commercial schools at Kobe, Tokyo, and Kito exhibit full sets of account books. The Imperial University is represented in the exhibit by its department of engineering and harbor improvements. The Educational Museum has an exhibit of models,

charts, and diagrams. A full set of the text-books, as well as the other school apparatus, are also exhibited. There can be no doubt but that Japan is doing much for all classes and grades of her children.

Australia disappointed her friends in sending work from but one province, New South Wales, and this probably not the best. The best part of the exhibit was the work in vertical writing. Sydney, Singleton, West Maitland, and other towns clearly demonstrate the superiority of vertical over oblique penmanship. The language work exhibited was largely technical; it lacked freedom and fullness. The drawing, to except the mechanical drawings from the technical schools, was of an inferior order. Much of it was done with pen and colored inks, and the combinations of colors in most instances were atrocious. In manual training the exhibit was strong, especially in garment making. Young girls in New South Wales do much better in their sewing than girls of equal age in the United States, France, and England. The Sydney Polytechnic College made by all odds the most creditable display from New South Wales. Its work in plumbing was unique, and it had some good woodwork. The institutions for the education of the deaf and blind exhibited their industrial work. The New South Wales exhibit was not displayed to advantage. The written work was in glass cases, and these were only to be opened by attendants, who were seldom on hand to do it. The spirit of the Australian work exhibited was that of the English school, although the exhibit at Chicago was so much inferior to the London exhibit that it hardly deserves to be mentioned in the same connection.

XVII. By an oversight, the West Virginia exhibit was not mentioned in discussing the work from the Middle States. This exhibit was neither large nor especially strong; but it presented very satisfactorily the educational activities of the State. Wheeling, Parkersburg, and Charleston sent most of the work. The collection of photographs was large, and these included not only exteriors of schoolhouses, but interiors and ground plans as well. There were some pieces of woodwork from the deaf and dumb asylum at Romney that showed skill in handiwork. A chart illustrative of the educational exhibit and a pen drawing of the State capitol attracted general attention.

While the United States Furniture Company, the Prang Educational Company, the Milton Bradley Company, and the various book publishers \* \* \* made full and satisfactory displays, with the exception of text and reference books, there was a dearth of teaching appliances at the great Chicago Exposition. This was especially true of school furniture and the ordinary school apparatus. True, some of the schools for teachers—as, for instance, the normal schools at Bridgewater and San Jose and the College for the Training of Teachers in New York City—had excellent displays of homemade apparatus; but the commercial exhibits were for the most part small. One little city in Minnesota (Stillwater) made an exhibit of one line of school apparatus (optical projections) that was paralleled only by the French exhibit. A real genius, Mr. Frank T. Wilson, has for some years directed the schools at Stillwater, and he made at Chicago an exhibit of projection appliances that won for him and his city the approbation of the foreign and American critics. Mr. Wilson is one of the first to introduce and simplify this form of illustrative teaching in the New World, and his exhibit at Chicago was the inspiration and model of much that will be done in this line during the next decade.

The workings and aims of the Bureau of Education were shown by Dr. Harris to great advantage, the only regret being that it was placed in the Government Building instead of in the Building of Liberal Arts, but this was beyond Dr. Harris's control. When one surveyed the 21 volumes of annual reports of the Commissioner of Education—a veritable cyclopedia of education; the great number of special reports, the eighty-odd monographs on institutions, systems, and practices, and the 50 miscellaneous publications—when one saw these together at Chicago and noted their contents and influence he could but reflect upon the wisdom of our National Government in establishing the Bureau. Henry Barnard planned wisely when he



presented to the American Association for the Advancement of Education, in 1884, "A plan of central agency for the advancement of education in the United States." Another feature of the exhibit of the Bureau of Education was the "model library." This contained a part of a selection of 5,230 volumes, made by a committee of 75 librarians and specialists chosen by the American Library Association. The catalogue of this "model library" will be very helpful in the formation of small city libraries. Surely the American teacher who studied the Bureau of Education's exhibit had abundant occasion for professional pride and gratitude to our National Government for what it is doing to create for us an extended pedagogical literature.

#### WORLD'S FAIR EDUCATIONAL NOTES.

By Mrs. JENNIE M. BRYAN, in Boston Journal of Education.

If the teachers of the country were not lacking in true professional spirit, would the southwest gallery of the Liberal Arts Building be so neglected? Would a surgeon studiously avoid a display of instruments and appliances pertaining to his profession?

There are schools and there are schools. The Boston schools and those of the back districts are not the pedagogical antipodes. It is a fact to be welcomed with glad acclamation that English is becoming a recognized branch of study, and is receiving as critical attention as has been bestowed for years upon Greek and Latin.

The most pleasing, the most utilitarian product of an educational course is the ability to use the mother tongue well. This is alike necessary to the successful business man and to the society belle. A few of the best schools of the country, notably those of Boston, St. Paul, Minneapolis, Denver, and Indianapolis, have recognized the imperative need of a greater facility in the use of both spoken and written English, and also have been convinced of the really practical benefits to be derived from a better acquaintance with English literature.

To this end they have formulated courses of study making language the foundation, the keystone, the ornamentation of the educational structure. This has been made possible in the lower grades by the unification of subjects. The child in his earliest school days is given a leaf, a flower, or an insect. He is led to examine it, talk about it, count its parts, write little sentences about it, and draw it. It furnishes material for reading, writing, spelling, arithmetic, and drawing. Having something to talk about in which he is interested, under the teacher's wise guidance, he talks about it freely and naturally. When he takes his pencil in hand it does the talking with scarcely more effort or less accuracy. This develops a little later into a broader course of nature study and literature. In the third, fourth, and fifth years the pupils examine plants, insects, and stones with a view to a more scientific knowledge; they record their observations and enliven and beautify their papers by means of well-executed drawings of the object and its parts.

In their earliest school years, and on up, the senseless practice of learning to repeat memory gems has given place to the study of memory gems.

In explanation of this statement, let me call attention to two exhibits. Here is a set of fifteen or twenty papers on which are written, with labored nicety and much red-line elaboration, several memory gems. One copy of "The fiftieth birthday of Agassiz" differs from the other fifteen or twenty in no particular except in the name appended. But here is another set which presents a pleasing variety. There is a paraphrase of the poem by one pupil, a reproduction of it by another, an interesting sketch of the life of the naturalist by a third, and a no less simply childlike one of Longfellow by a fourth. But the best feature of it all is the evidence that some pupils have gotten very near to the heart of the dear old nurse Nature, and have given expression to the keen sense of delight awakened by the poem in attempts at original illustration. One biographical sketch shows the Swiss home in the beauti-



ful Pays de Vaud; another Nature's storybook is strewn over with eidelweiss and entitled Rhymes of the Universe. How delightful such study! It is not difficult to say which pupils will remember that poem, even to their fiftieth birthday.

The work shown by a great majority of the schools proves beyond a doubt that drawing is not merely a pretty accomplishment, but something as useful and necessary almost as writing. From the child of 6, beginning with 2 and 2 are 4, on up to the high school pupil, every subject studied is illustrated if it will by any possibility admit of pictorial treatment.

The entire absence of abstract arithmetic work in the first, second, and third years was a noticeable feature of a number of the best schools. There was no puzzling of the infantile mind with the abstraction  $17-3=\text{what?}$ —but it was, I have 17 marbles and lose 3, how many have I left? And there along with the statement was the picture of 17 marbles owned, 3 marbles lost, and 14 marbles remaining. In the fourth year, and to some extent in the third, the transition was made to abstract work, but whenever concrete was done, the solution of the problem was accompanied by a neatly executed picture demonstration.

A school, nameless, presented a set of papers in United States history, giving answers to such questions as, "Who discovered America?" "Where was De Soto buried?" "When was Ohio admitted into the Union?" Simply a set of examination papers, cold, dull, and dispiriting, benefiting more the maker of paper than anyone else. In gratifying contrast to this, was found a set of papers selected from the year's work of one of the Chicago schools. Biographies of eminent men were embellished with portraits of the subjects and pictures of their homes; descriptions of battles were accompanied by well executed maps showing the positions of the contending armies; the recital of facts was made interesting by the charm of interwoven bits of story and song; and pervading every paper was the suggestion that the pride and delight felt by the pupils in doing this work would grow, in time, into a pride and delight in exercising the rights of American citizenship.

The schools of Denver, Colo., presented the most unique feature of the whole exhibit, namely, a stenographic report of everything said and done by both teachers and pupils for one day, throughout all the grades of one, presumably the best of her schools. It proved interesting reading, but showed nothing remarkable as to matter or method. It did show, however, the ability of the teachers to control most admirably for one day at least, both tempers and tongues, and that, too, under most exasperating conditions, as witness the following: A boy, of course, was called upon to parse the verb in the sentence, "Shepherd lead on." Parsing: "Lead is a verb, transitive, because it expresses action done to an object; passive, indicative, present tense, progressive form." An appreciative reader of the report had written in the margin "A gem."

The most beautiful exhibit came from Sidney, New South Wales. The writing looked like copy plate, but not the copy plate to which we are accustomed in which hair lines and shading mingle with a Rembrandt effect. It was either a verticle or backhand, the system beginning with the primary, and being maintained to the last grade.

The first year writing showed vertical letters, very large, the writing spaces being about the width of the spaces between the lines of ordinary foolscap. This seemed to meet the requirements of the child, for there was a boldness and freedom about this first year's writing that was truly refreshing after looking at the diminutive, cramped letters shown by other primary schools. The second year the spacing was diminished, and so on, until about the fourth year it conformed to the ordinary standard. The advantages claimed for this system are the ease with which it is learned, its beauty and legibility, its great rapidity, and its perfect adaptability to business requirements.

The Indian schools of Haskell Institute, Kansas, and Soboba, Cal., were the most surprising in their results. The writing resembled very closely that of the Sidney

schools, being almost as beautiful. The illustrations were admirably executed, and the language had a genuinely original flavor. The work done by pupils after seven, fifteen or twenty months was in advance of that presented by any other school examined, and forced from my companion the question, "What do you think now of the doctrine of heredity?" The age of pupils entering these schools is much in advance of the ordinary age limit, but is a period of five or six years added to a child's age to offset several generations of intellectual culture?

The exhibit of the intermediate schools of Indianapolis was disappointing in that it presented sets of examination papers. The primary work was fine, showing the development of the plan of unification of subjects. The high school was excellent, particularly in the line of literature. The curriculum of the Indianapolis schools provides for a systematic study of the English language and its literature throughout the entire course. In the high school, Latin, Greek, French, and German are elective studies, but English is compulsory. As a result the pupils express themselves with an ease, gracefulness, and power that would compel Bostonians to own them cousins germane.

The craze for illustrated work reached its climax in the musical exhibit of one of the primary schools of New Jersey. The music portfolio was made of large sheets of manila paper, on each of which was written the words and air of a juvenile song. The music of "Twinkle, twinkle, little star" was indicated by a star on the appropriate line or space, instead of a note. For "Dickery, dickery doek," a "cute" little mouse balanced himself on a line or rested on space as the requirements demanded. So on through "Jack and Jill," "Busy Bees," and "Here we sail," the symbol used was a bucket, a bee, or a boat.

It was a matter of surprise that so many schools showed work that to a casual observer looked beautiful and fair, but which upon examination failed to be either helpful or inspiring. The exhibit would be voluminous, handsomely bound, and placed to advantage. The writing would rank among the best shown, but the subject-matter would be merely answers to lists of examination questions, the chief aim being to have each pupil represented in each branch. This is, of course, very gratifying to Johnny's mamma or Katy's papa, who may wish to see their dear children's papers at the great Fair, but to the teacher searching for ideas and methods it proved unfruitful soil.

The deepest impression that remains is that those schools which have accepted the revelation that the soul of the child who comes to them is the soul of a man or woman, perfect in all its parts, yet waiting the kind, the wise, the gentle guidance of the teacher to develop the highest qualities of intellect and heart; and those schools which have made nature and literature the great media through which this is to be accomplished, are coming into the bright light of the educational noonday.

#### CATHOLIC EDUCATION AT THE WORLD'S FAIR.

By JOHN J. O'SHEA.

As the tree is to be judged by its fruit, in the words of the Divine Master, so the generous vine of Catholic education may be appraised, in a measure, by the living proofs it modestly put before mankind in the noble Hall of Liberal Arts at the Columbian Exposition. Multitudinous and wonder-compelling as the various departments of the Columbian Exposition are from many points of view, the array of examples of Catholic training here presented claims the palm over all. As an exposition of a system, it is the most striking in extent, in variety, in evidence of a masterly system of mental direction that ever yet was brought before the world's notice. It dwarfs into insignificance the displays of educational results made by any and every institution in the country, universities, colleges, and training schools taken altogether. The mobilization of such an army of practical witnesses for superiority was in itself a peculiar task. It demanded a special and intimate knowledge of a



system which may be described as world-wide; it demanded a personality influential enough and magnetic enough to secure the heartiest cooperation simultaneously in places separated by vast distances; it demanded one, moreover, endued with an indefatigable spirit of industry. The man was found in the person of Brother Maurelian. He is the Von Moltke with whom the scheme of mobilization originated and by whom it was so splendidly carried out. \* \* \*

Recognizing the importance of being early in the field, Brother Maurelian made his application for space at the Exposition as soon as the directorate and committees were organized. Although he encountered much difficulty at the outset, he was met at length in a spirit which can not be too highly extolled. Thirty thousand feet of floor space, roughly speaking, was placed at his disposal, and the position which he was fortunate enough to secure is probably the finest in the great hall devoted to manufactures and the liberal arts. This space, large as it is, would not suffice for a tithe of the exhibition which could have been made had there been more time for preparation and a condition of unlimited space; and as a matter of fact it has not nearly sufficed for the great mass of materials forwarded to Brother Maurelian from the various dioceses which responded to his invitation. He had asked for a space of 60,000 feet, anticipating the large amount of material which would be at his command, but he could hardly have expected the directors to give more than they did under the circumstances. But the display he makes is imposing, extensive, splendid, and marvelously eloquent of the care, taste, industry, and energy of the whole soul of Catholic teaching. \* \* \*

Bearing in mind the fact that in the collection which has called forth this tribute of admiration, but the work of only a portion of the Catholic schools of 20 dioceses in the United States was shown, one might easily imagine what would have been the writer's wonder had all the archdioceses, dioceses, and vicariates in the Union, numbering about 90, been represented in similar proportions. Perhaps it is better that the display is confined to its present dimensions. It conveys a deeply impressive lesson, whose effect might be minimized by being further protracted. It is the frailty of our nature to grow weary with the repetition even of excellent things when we have had enough to convince us of their undeniable worth. It is sufficient to say that, as it stands, the Catholic educational exhibit is incomparably the greatest display of its kind ever made.

The importance of putting such proofs of Catholic activity before the world at this particular epoch was at once perceived by all the hierarchy of the United States. Bishop Spalding, of Peoria, took an especial interest in the project from its inception. The unfortunate divergences of opinion amongst Catholics over questions of school attendance and State help, perhaps, naturally led many outsiders to think that while internal disagreement reigned the real work of education might be to some extent neglected. To such mistaken people there could be no greater surprise than this revelation of Catholic activity. There have been no controversies to disturb the serenity of the managers of the public schools. With them everything has gone on as smoothly as the current of the Schuylkill, and apparently as somnolently. \* \* \*

To the kindly cooperation of Dr. S. H. Peabody, chief of the liberal arts department of the Exposition, the promoters of the Catholic educational exhibit owe mainly their success in having their display so extensive and effective as it is. To his aid they are indebted for the prominent site and ample space they have secured; and he, on his part, feels how largely this display has contributed toward making the World's Fair an adequate exemplar of the active mental and mechanical progress of the age. In his little speech at the throwing open of the exhibit he warmly expressed his thanks, on behalf of the World's Fair authorities, to all who had cooperated in the work. His surprise at the colossal results achieved in such a brief interval was by no means concealed, and the eulogy which he pronounced on the zeal of the whole Catholic teaching body in preparing the youth of the Catholic



populations for the practical work of existence was the genuine expression of a broad and liberal mind. In this marvelous array of proofs he beheld a signal refutation of the widespread calumny that the tendency of Catholic education is to dwarf the scope and limit the faculties of the human mind. But he saw only one side of the picture. This was but the practical side of the Catholic system which he was beholding. Behind that mass of work of hand and brain lies the invisible sleepless activity which, while training the physical faculties, keeps ever leading on the moral ones to a clearer conception of the truth that there is a higher goal to be reached by the intelligence than the conquest of earthly knowledge, and that the sum of human perfection must have its final complement in the display which shall merit the everlasting award of the Judge who sits on high. This is what is meant by the twofold work of Catholic education. \* \* \*

In the arrangement of the mass of material placed at his command Brother Maurer has exhibited a masterly ingenuity. By a simple device he has managed to double the ground space, so to speak. By running a desk around each of the compartments, into which the exhibit is divided, he has been enabled to supplement his wall surface so that none of his space shall be wasted. Sufficient room is given for the visitor to walk all through the compartments and examine the work spread out upon the desks and hanging on the walls. The finer and more frangible objects are displayed in high glass cases standing in the center of each compartment.

What is here made manifest may be divided into two branches: the methods of teaching and their practical application by those taught. Take, for instance, a specimen of work from the De La Salle Institute in New York. It is the engineer's plan for a great iron bridge. Here you see the notes taken by the pupil from the teacher's instructions. Then you see the plan and the elevation drawn in regular artistic fashion. The dimensions are given; then the details down to the last bolt; then the estimate of the cost of the whole work. There is no particular missing; the plan might be at once put into a contractor's hands, and he would have no difficulty in setting to work to make the suppositious structure a substantial reality. So in astronomy, so in music, so in mechanics of many kinds. The system is lucidly demonstrated in the intelligent action of mind upon mind.

Twenty dioceses of the United States invite examination of their educational methods. The Canadians have an independent exposition of their own, of which a word later on. The American dioceses stand in the following alphabetical order:

Brooklyn, Buffalo, Chicago, Cleveland, Covington, Denver, Detroit, Dubuque, Fort Wayne, Green Bay, La Crosse, Manchester, Milwaukee, Natchez, New Orleans, New York, Pittsburg, Philadelphia, San Francisco, Sioux Falls.

The religious teaching orders in charge of the schools whose work is shown are the following:

Benedictine Sisters; Dominican Sisters; Franciscan Sisters; Franciscan Sisters of P. A.; Ladies of Sacred Heart of Mary; Mesdames of the Sacred Heart; School Sisters of Notre Dame; Polish Felician Sisters; Sisters of Charity (B. V. M.); Sisters of Charity, Emmitsburg; Sisters of Charity, Mount St. Vincent; Sisters of Charity, Nazareth; Sisters of Christian Charity; Sisters of Divine Providence; Sisters of Loretto; Sisters of Notre Dame, Cincinnati; Sisters of Notre Dame De Namur; Sisters of Mercy; Sisters of Providence, Vigo County; Sisters of St. Agnes; Sisters of St. Joseph; Sisters of St. Francis, Oldenburg; Sisters of the Holy Cross; Sisters of the Good Shepherd; Sisters of the Holy Child Jesus; Sisters of the Holy Family; Sisters of Humility of Mary; Sisters of the Immaculate Heart of Mary; Sisters of the Incarnate Word; Sisters of the Holy Names; Sisters of the Poor Handmaids of Christ; Sisters of the Precious Blood; Sisters of the Presentation; Ursuline Sisters; Visitation Sisters; Grey Nuns; Congregation of Notre Dame, Montreal; Sisters of Charity, Greensburg; Sisters of Charity, Leavenworth; Sisters of Charity, Mount St. Joseph; Sisters of Charity, Cincinnati; Benedictine Fathers; Congregation of the Holy Cross; Congregation of St. Viateur; Fathers of the Holy Ghost; Jesuit Fathers; Lazarist Fathers; Secular Clergy; Brothers of the Christian Schools.

Individual exhibits are shown also by the Catholic University of America, Washington, D. C.; the Catholic Archives of America, from Notre Dame University, Indiana; the Catholic Total Abstinence Union of America, represented by its Temperance Publication Bureau; the Catholic text-books; the Columbian Library of Catholic Authors; the League of the Sacred Heart; Miss M. G. Caldwell (first foundress of the Catholic University), embroidery; Miss M. L. Ash's art school, Memphis, Tenn.; the Papal Josephinum College, of Columbus, Ohio, and the University of Notre Dame, Indiana.

A glance at the artistic features of the general exhibit reveals some work which challenges attention, not from its mere abundance, which is great, but from its general excellence. Some of it is simply splendid. The place of honor is properly given to the Chicago exhibit, and the chef d'œuvre in this is, according to strict definition, perhaps, a school show piece. It is a white Carrara marble statue of Archbishop Feehan, with the figure of a couple of school children at his feet. The work is full of grace, dignity, and life, and tells its own story as eloquently as any marble composition can; and all the cunning of the modern Italian school of sculpture is exemplified in its treatment. It is the work of a Roman artist, and its cost was \$15,000. The priests of Archbishop Feehan's diocese subscribed the sum as an affectionate recognition of his claim to be regarded as the "protector of their schools," a distinction which he undoubtedly deserves. Gregori's fine portraits of a large number of the American Catholic hierarchy, which are found in the collection sent by Notre Dame University, as well as the portraits of Archbishop Riordan and Bishop Spalding, which are apart, may also be excluded from the list of educational exhibits, in a similar sense. But besides these there is a great body of artistic work, in oil, in water color, in crayon, in india ink, and in pencil, which furnishes a means of judging what advance we are making in this important branch of education.

There is no one so weak as to believe that America has achieved the first rank in art, but every honest critic believes that earnest effort is being made to attain to excellence. Artists do not spring out of the ground like the fabled men and women of Deucalion and Pyrrha's time. Genius is not to be compelled; in due time, no doubt, it will visit the American shore and found a true school of art here. It is not claimed for any of the schools whose art teaching is here exhibited that they have reached the highest level attainable. There is a great inequality observable in the mass; there are cases of bad drawing and inharmonious and slovenly coloring; but there is work that is really true and good, and some that of its kind is positively beautiful. This is true especially of the specimens of illuminated work executed by the pupils at the Sacred Heart Convent in San Francisco. The collection of work shown by the Sisters of Mercy of that city is also remarkable for its excellence. Some admirable work in crayons and water colors is presented by the pupils of Miss Starr's preparatory fine-art classes. The steel engravings from the Catholic high school of Philadelphia, founded by Thomas Cahill, are especially fine, and a corresponding level of excellence is noticeable in the examples of drawing and painting and embroidery turned out by the same institution.

Numerous examples of oil painting are shown in different sections of the exhibit; and of these a very crotchety critic observed in one of the daily papers that the only good end they serve is to show the worthlessness of the teaching. Criticism of this kind is not worth answering. These pictures are not put there as pictures in an art gallery are. They are there neither for competition nor sale. They are put there simply to show what progress the young art students are making in the very difficult technique of color, which many eminent artists have vainly spent their lives in trying to master, and which no degree of excellence in line drawing could ever help some to gain.

It would be just as reasonable to take exception to the occasional blunders in spelling, or the faulty compositions which are found occurring here and there in the class papers of the pupils. Surely no one would expect perfection from those who



are in the state of tutelage. The whole school system, so far as it applies to the training of the mental and physical faculties, is laid bare to the world's inspection, with all the imperfections of juvenile human nature on its head; and there never was a creature more out of his element in such an exhibition than the professional art critic, the individual, as a rule, who has failed in everything himself.

Even Mr. Suerwell would find it hard to get ground for cavil in the beautiful specimens of work shown by the pupils of the Christian Brothers' schools in Paris. It is full of art workmanship in many branches, all of marvelously fine execution for boys, and the specimens of drawing and engraving are of a remarkably high order for juveniles. The French claim to be at the head of the list of all things educational, and no one can say that the challenge which they give out at the World's Fair will be readily taken up.

In the Canadian exhibit some noteworthy features are presented. The display made by the Catholic schools of Quebec covers 1,700 square feet of floor, while the showing of the Protestant schools from the same Province fits in a nook measuring 175 square feet. The Protestant Province of Ontario, on the other hand, sends from a total of 5,878 schools an aggregate of 375 exhibits; while the Catholics of the same Province send from a total of only 289 schools no fewer than 234 exhibits. The quality of the artistic work sent forward by the Catholic schools is vastly superior to that of the other schools of the Dominion which have sent specimens of their products. There are some aspects of the Dominion display which make it compare favorably with that of any of the other countries represented. The show of herbaria, for instance, in which specimens of the multitudinous wild flowers of Canada are collected and arranged with exquisite harmony of arrangement, is especially impressive. The fine sense of fitness in association and taste in grouping and artistic form seen in these numerous collections is at once felt and confessed. In the work of the brush, the crayon, and the pencil, too, Young Canada need not have any trepidation about competing for honors. Some traces of the French genius is visible throughout the display from the Province of Quebec.

It is not a matter for deep wonder that this display exhibits a superiority. \* \* \* The minority in any locality in Quebec is entitled to its pro rata of the public taxes levied for educational purposes, to be applied in accordance with the views of the minority. This in effect leads in that Province to the denominational rule in education. As the Catholics are greatly in the majority in Quebec, they receive the maximum of the public taxes, and are thus enabled to secure the very best teaching appliances that money can obtain. The teaching power they already possess in plenty within their own religious and semireligious bodies.

In the various kinds of handicraft shown here, the work of American boys in the more practical and everyday classes of production need not fear comparison with that of any others. Especially fine examples are sent in from the Catholic Protectory of New York, for boys and girls, and the great trade school on Staten Island.

Teaching those who are in possession of every natural faculty is in many cases no easy matter; but the instruction of that unhappy section of the human family who come into the world without sight, or hearing or power of speech, or become so after their coming, must be regarded as the perfection of the teachers' skill. It was with Catholic teachers that the idea of educating these maimed intellects began, and by them in France and Italy and Ireland that it is carried on mostly at present, with results that on consideration seem perfectly astounding. The cultivation of literature, music, and the fine arts, as well as many mechanical industries, by the blind and the deaf and the dumb demands specially qualified teachers; and to the furnishing of these the religious orders now devote constant and most earnest attention. The specimens of work sent in by the Catholic Protectory pupils of this class deserve more than a passing notice. There are some very beautiful specimens of lace shown in the Canadian exhibit, the finest being the work of a girl of 13 who is totally blind. The instructresses of these Canadian blind girls are the good sisters known as the Gray Nuns.



Marvelously fine work is also shown by the Ephpheta School, of Chicago, in an astonishingly varied field. Engraving, lithographing, photography, designing for carpets and wall paper, and many other decorative branches of industry are taught, it will be seen, most successfully in this admirable institution.

To many the attractions of the kindergarten display made here will prove superior to any other, as that system has now come to be regarded as the *summum bonum* in the educational field. Here is a bright and picturesque array of proofs how readily the little mind can be developed into the big one, as its powers are one by one awakened and appealed to in the course of its school-play years. The little pictorial efforts, and the efforts in tiny handicraft, show that the shepherd boy who began drawing his sheep upon a slate and the builder of miniature fortresses in the mud or the sand by the seashore were most likely in reality the originators of the idea which Froebel and his successors took up and translated into action.

It is only the preparatory stage in literature and art, it must be remembered, which this exhibit contemplated as coming within its scope. The fact that there are contained in it illustrations of the higher education in both of these walks of civilization serves only to show, perhaps, the nakedness of our land in that respect. The higher education, as an institution, for American Catholics is a thing of possibilities; how immensely they are handicapped in that direction may be learned from a comparison of the other educational exhibits with theirs. All that the public and private generosity of a great people could do has been done for the men and women of other creeds here; all that has been done for the Catholics has been done out of their own resources. The Columbian Library of Catholic Authors is a collection of no small interest and value as testifying that in the higher education Catholic names are not by any means unknown, even here; and the women's department in this collection is not the least interesting portion of it. The fine exhibition from the Catholic University of Notre Dame, Indiana, gives an excellent idea of the present state of scholastic life in that institution and the high plane of its studies and scientific pursuits. The American Catholic Historical Society deserves a word of praise for the flood of light it lets in on the past of the struggling church on this continent by its rich archæological collection of ecclesiastical, artistic, and literary work.

To the collection of these objects made by Professor Edwards of Notre Dame, Indiana, the palm of merit in this department must be given. He has got together a perfect storehouse of precious ecclesiastical relics. They tell a wonderful tale in their way, these mitres and croziers and vestments, tarnished with age; these missals and breviaries and calf-bound volumes whose pages are yellow-gray as the face of a mummy. \* \* \*

Many things are taught by this exhibit. We are lifted up in thought as we wander through its varied mazes from the contemplation of the wisdom and the care manifested in the details of the system to the nobility of the purpose; and we see underlying it all the sublime tenacity with which the Catholic Church goes on in her beneficent way. Through good report and evil report she adheres to her mission, whether states or Governments frown upon her or smile. She will not neglect her own, no matter who despises them, but like a tender mother and guide still helps them onward in the world, upward toward the light.

### THE CATHOLIC SCHOOL EXHIBIT.<sup>1</sup>

[From The Catholic World.]

By a PROFESSOR IN PEDAGOGY.

To the intelligent observer the Catholic school exhibit, lately held in Central Palace Hall, New York City, is an event of more than passing interest. To quote the words of his grace the most reverend archbishop of New York, we may say that—

"It is not necessary to say that our schools are improving. It would be a miracle if they did not improve.

<sup>1</sup> Though this report refers to an exhibition held in New York, it is here inserted because most of the objects there exposed to the view had also been exhibited in Chicago.

"In this age, when so much attention is paid to the subject of education—I do not refer to religious training, which has a paramount importance in all our institutions; I speak rather in regard to secular education at the present time—when the very best methods of teaching are the object of constant thought, when the best educators are devising new ones, and all means are suggested that can be of use in this work, it would be next to impossible to move in such an atmosphere and not to take advantage of all the benefits that accrue therefrom. And if we add to this the zeal of our brothers and sisters, and the great attention our pastors give Christian education in our schools, we shall understand at once that necessarily progress is made from day to day."

We had already examined much of this display at the Columbian Exposition in Chicago; but, as stated by his grace the most reverend archbishop: "It was intended to have had the exhibition before this; but after the exhibits came back from that great city, where they had been exposed to the dust for several months, and as the books had been handled in many cases by thousands of visitors, it was deemed advisable to supplement all by new work especially prepared, as during that time a certain amount of experience had been acquired, and the children themselves were spurred on, by the many awards given by impartial juries for their work, to do something better and brighter." It was, therefore, with real satisfaction that we renewed our acquaintance with much that this exhibit offers, while we gladly admit that a considerable addition of really deserving work is found in this second exhibition. Our remarks are limited to elementary and intermediate studies in English.

#### UNIFORMITY OF SYSTEM WITH ELASTICITY IN DETAIL.

The first thing that strikes us in this exhibit is the independent action that it presents, combined with a unity of aim and object such as to convince the close observer that in no body is their greater harmony of action, combined with greater freedom in the application of pedagogic principles, than among Catholic teachers. Any impartial critic will admit that there is not a single new idea that has approved itself to conscientious instructors which does not find a place in some part of the display. A recent editorial in a leading educational journal in New York stated unreservedly that the religious teachers of this metropolis and vicinity are the most extensive and appreciative readers of school literature and of pedagogic publications. A close examination of the work presented, from the kindergarten to the college, shows this; for some of the very latest lessons published in leading school journals, many of the suggestions for special "class days" that have appeared within the last few months, have been adapted and used in some of the new work shown in this exhibit; while it is a well-known fact that many religious teachers from within a radius of 100 miles, or even more, have been daily visitors at the Catholic exhibit; just as thousands of religious teachers came from great distances to study the Chicago educational display.

Better still, in the normal methods presented by at least one of the training schools, it is evident that in the formation of young teachers Catholic organizations are abreast of all that is best in modern methods. Though we refer to this normal college in another portion of this article, we must here say that among the papers presented by the normal scholars we noticed a series of studies on the great educators; besides giving the names of those who are generally included in such enumerations, the professor of the history of pedagogy has included several others thoroughly well known to continental readers, but whose claims, for some strange reasons, have been ignored in American publications. For terseness and brevity, combined with amplitude of analysis, these studies deserve more than this passing notice.

Still more satisfactory is the fact that in all the leading branches of elementary, intermediate, and higher instruction Catholic writers offer works based upon the latest researches, and in line with the most advanced, accepted teachings of leading minds.



## THE SPIRIT OF PATRIOTISM INCULCATED.

Another sentiment suggested by the general outline of the exhibit is one of legitimate national pride. His grace the most reverend archbishop might well declare that "we are all fond of our common country." No general order, had it been given, could have brought about such a public expression of love for the national emblem. In every schoolbook, in some copy book of each school, in many of the literary compositions, the flag of our country and its history occupy a prominent place. It would be difficult to find a more direct proof of the love of country than is furnished in the sketches at the head of the lessons in United States history furnished by some of the convents, and in the "Summaries of American topics" found in many of the boys' schools.

It is worthy of remark that some of the brightest ideas in patriotism, shown in these sketches, are the contributions from the schools directed by religious persons from abroad, who have been called to help the cause of education, which has developed so rapidly that local religious organizations have been unable to meet the demand for teachers.

## GEOGRAPHY AND HISTORY.

While there is direct evidence of singleness of aim and purpose in most of the ordinary school work, there is also ample proof of a healthy individuality of action in the different plans adopted for the development of the teaching of geography, for the illustration of geographical terms, and the intelligent coordination of geography, history, free-hand drawing, and natural science. Of more than usual worth are some of the raised maps. A few of these are of a very high order of merit, considered artistically or from the pedagogic standpoint. It is no disparagement of the work shown in Chicago to say that there are maps in the Catholic exhibit surpassing the very best specimens shown in the White City. The application of needlework to mapmaking is a feature that deserves all the praise it received. These samples came from ordinary parochial schools, though two or three convents had a larger collection of a more artistic type, a specimen from a female industrial school being the best. The combination of colors in these threaded maps has a very pleasing effect. Harmonious work is evident in this geographical collection. Generally speaking, where one department of a parish school has good work, the other has followed suit.

Bible history is shown in every variety of form by a large number of the schools. The illustrations that accompany these Bible lessons are not always of a high order of merit, but they may be the more readily accepted on this account. In this, as in all other work presented at the exhibit, the leading feature is the variety of merit as well as of grade, showing some very ordinary attempt beside work of artistic or literary value. This is an evidence of good faith that keen observers will appreciate. What is said of Bible illustrations will apply equally to English compositions, or simple class talks, founded on ordinary pictures. In several schools these illustrations have been culled from ordinary papers or magazines. Others have been taken from art journals. Some pupils have reproduced the illustrations as head pieces to their compositions, and in many cases the results are highly commendable, some showing evidence of really artistic merit as well as discrimination in selection.

## EXCELLENT PENMANSHIP.

Much of the penmanship, particularly in the boys' schools, is above the average. In a few cases it is very poor. If we may accept the pedagogic principle that penmanship is the key to the discipline of the class, most of our Catholic schools leave nothing to be desired on this point. Some of the penmanship is of so high a grade, especially in some convents and in many parochial schools, that several teachers of non-Catholic schools have questioned the genuineness of the samples shown. These teachers forget that the artistic instinct is highly developed in the best grades of



Catholic schools. The great attention paid to drawing in these schools has much to do with their success in penmanship. Still, we are free to admit that, in a few instances, claims are made that we could not reconcile with the age of the scholar and the class of penmanship said to be the pupils'. We revert again to the idea that every properly furnished and well-directed Catholic school is a gallery of religious illustration. But this artistic surrounding is not in sympathy with the putting of poor penmanship, written in lead pencil, within costly binding. In fact, lead pencil writing is not desirable for young children. It does not call for light and shade, nor does it afford the digital drill that is an essential in every expert lesson in penmanship. Its redeeming feature is that it excludes the blotting and blurring so common in young children's work.

#### SENTENCE BUILDING—LANGUAGE LESSONS.

We note with satisfaction the introduction of religious subjects into the construction of sentences and the writing of elementary compositions. No intelligent critic will fail to perceive that lessons on religion present a class of terms and expressions that are not found in secular branches. These terms form no inconsiderable share of the pupil's stock in language. Sentences formed with such words as the basis of construction must be of particular value, as thoughts are thus suggested and ideas developed that no other subjects can bring into play. In this group of school work are sets of instructions given on religious or moral truths by the reverend pastors or their assistants. One boys' reformatory had a series of shorthand reports of a series of sermons given during a mission or spiritual retreat. Another institution of the same kind for girls offered a collection of the instructions given to one of the sodalities. Many of these instructions are written by instructors who are in full sympathy with youthful minds, and there is a happy knack of illustration that shows a deep study of subjects with which children are pleasantly familiar.

We again call attention to the evidence of freedom of action in each school, or even in the classes of each school. Each has something local in its work. A history of the parish, special accounts of the history of the school, the church, or the pastoral residence, and kindred topics create a parish spirit and a pride in parochial enterprises that will bear good fruit in the near future.

#### THE DRAWING CLASSES.

Drawing is a leading branch in the exhibit. Much of the work shows excellent grading and is in line with the latest approved systems. In some of the largest specimens in oil or water colors the grouping is not very happy; the foreshortening is particularly defective. A few specimens in black and white are singularly lacking in taste. Perhaps a preliminary examination by a competent committee might debar such inartistic exhibits. Apart from these the exhibit is good.

While speaking of drawing it may be in order to remark that several schools limited their entire exhibit to a mere collection of pictures and sketches. This is not a fair test of a school's standing. It is to be regretted that these schools did not enter more fully into the spirit of the exhibit. Their art specimens give evidence of talent of so high an order that the same ability displayed in other directions would be sure to produce happy results. It is possible, also, that these schools could not get the space they needed to make a more complete exhibit.

#### WORK OF THE PROTECTORIES.

It is but simple justice to our homes, protectories, and industrial institutions to say that their exhibit in the art department is among the best in the display. The wood carving is excellent, the clay modeling—done in presence of the visitors—the application of drawing and sketching to practical industries were all very attractive. The best collection of photographs was made by one of these schools; but

while this is good in its way, we do not consider that photographs, however artistic or numerous, are a fair exchange for actual work.

In their ordinary school work these industrial and correctional establishments surpass many parochial schools. We naturally expect the manual training in the former to excel, but when we bear in mind that the inmates of these industrial schools have much shorter hours of study than ordinary day schools we are obliged to admit that the scholars must be anxious to learn, influenced, probably, by kind treatment, to which they had previously been strangers, while the teachers throw their whole energy and talent into the Christ-like work of redeeming youth through the combined influence of mind and heart.

#### PROGRESS IN SCHOOL WORK—THE ANALYTICAL METHOD IN ENGLISH GRAMMAR.

The writer having devoted several months to the study of school work presented by Catholic schools at the London Health Exposition in 1884, at the New Orleans Cotton Centennial in 1885, and at the Chicago Fair in the past year, can bear willing testimony to the evidences of progress which this Catholic exhibit makes.

In the teaching of English a certain number of schools follow an admirable system, to which we have already called attention. A limited number of illustrations are carefully analyzed. Several sets of suggestions are given by which the same illustration may be studied from different points, thus making each illustration answer for several compositions. In grammatical analysis the diagram system appears to be still in favor, but in many cases where blue and black prints are used the script is so indistinct as to be practically illegible, and the analytical distinctions are lost.

In some of the academies, particularly in one of the oldest female academies of New York, we found some admirable literary work, based upon the study of the great American and a few of the leading English writers. Longfellow appears to be a great favorite. In at least two schools we found "Evangeline" exhaustively studied—with such association of composition, history, rhetoric, and declamation (or recitation) as the selection permits. No attempt was made in either of the convents or academies designated to give meritorious value to the copy books by any decoration or illumination. The work is allowed to stand on its merits.

#### UNITED STATES HISTORY.

In the advanced parochial schools, and in most of the academies, marked improvement upon the Chicago exhibit is seen in the study of United States history. The number of maps based on the critical study of the text is unusually large. While the coloring in many maps, especially some prepared by boys, is too deep and glaring, most are extremely good as studies, and more particularly as companion works to the text they are intended to illustrate. A still more striking improvement is the evidence furnished by much of this work that many reference books are at the service of the scholars. In several schools we found the same point in history examined from almost as many authors as there were scholars in the class. Particular attention has also been paid in the best schools to the reading that is recommended in most recent works in United States history. Poetry of a patriotic character bearing upon these historical questions has been read, and in many cases illustrated.

#### DRAWING AS APPLIED TO MANUAL TRAINING.

The application of drawing to manual training in our ordinary schools is developing rapidly. One parochial school in the outskirts of New York City has a series of specimens of graining, in imitations of various kinds of wood, which is so very good that we find it difficult not to give it special mention.

But the most perfect work of this kind that we can recall is furnished by a group of students who took their own measurements, rough sketched their plans on the grounds, made their own estimates of expense, and then, in a set of charts almost



perfect in color and design, have developed every part of their work with most complete detail and entire success. Neither London in 1884 nor New Orleans in 1885 had any such work. Part of this exhibit was at Chicago; other portions, notably some specimens of surveying, were completed only during the last days of the Catholic exhibit. His grace the most reverend archbishop has called special attention to this work.

#### TYPEWRITING AND SHORTHAND.

Phonography and typewriting appear to be on the wane. A few convents have taken up both, for one appears to be of little service without the other; but the boys' schools seem to show less than formerly. Probably the market has been glutted with immature operators; in any case, this class of employment, outside of public Government work, appears to be passing into female hands.

The typewriting shown in most of the schools is excellent. Two academies sent pupils to report the addresses of the speakers on the first night of the exhibit. Their transcripts were accepted by some of the metropolitan journals as equal in accuracy to the work done by professional reporters.

Some of the fancy work done by three schools was photographed at the expense of the companies whose machines were used. This figured work is done only during free time, and it is no exaggeration to say that the birds, flowers, buildings, etc., created by the typewriter are almost as lifelike and as expressive as if done by pencil or brush.

Much more practical is another class of school work done by the typewriter. In two commercial academies the manifold process has been employed to multiply copies of some excellent notes of lessons and developments of class topics. In this way the teachers of one city may distribute specimens of their best work to others, and thus disseminate excellent class work at very little trouble or expense. In some schools all the class specimens of typewriting are in capital letters. This is an easy way to write out any copy, but it spoils the appearance of the page, and should be used only when the pupil is beginning and unable to use both classes of type.

Speaking of commercial specimens recalls the fact that some of the bookkeeping sets presented by girls' schools are not as practical as they might be. Apart from this criticism, there is a variety of work showing conclusively that the bookkeeping sets are not mere reproductions from printed samples. Some of the sets are thoroughly original. Perhaps more explanation of the theory of the science of accounts should have been shown.

One school presented a series of charts showing the relation of the different books used in bookkeeping; the idea, if not entirely original, has been seen but seldom at any of the great exhibits. This same school has thoroughly good commercial work throughout.

#### KINDERGARTEN WORK—PRACTICAL APPLICATIONS OF DESIGNING.

A very striking part of the display was the vast amount of kindergarten work and the accumulation of specimens in wood and clay. This is the natural outcome of the deep interest that most Catholic teachers have shown in following some of the principal courses of industrial work furnished by technical classes. As experience has taught, manual training in ordinary schools must be limited to some very simple lessons in the handling of materials that are easily procured and not costly. Within these limitations the specimens which are offered by a very large percentage of the schools deserve study and analysis. The designs are almost limitless, and add another to the many proofs furnished that teachers in Catholic schools are allowed a healthy liberty of action that appears to be out of harmony with purely governmental institutions. The French minister of education who boasted that he could at any hour of the day tell what each child was doing in any school, in any part of France, would not recognize his iron-bound regulations in the extraordinary variety of method that these kindergarten and manual specimens furnish. Such magnificent specimens



as the new seminary, the miniature furniture, the models of illustration used in natural science, the church vestments on a tiny scale, the endless variety of methods in geography—all these would be relegated to a committee; rigid rules to which all must submit would be the order of the day; the schools would become part of a huge machine from which all originality would be ostracized, and in which healthy individuality would be a defect, not a virtue. For years English common schools were conducted on this cast-iron system, and teachers were driven to desperation trying to keep within rules and regulations that settled everything, from the time-table to the luncheon counter. Better counsels now prevail. Great personal liberty is allowed to teachers in the direction of their respective schools or classes. Results are determined by the general tone of the school, not by percentages in which fright has often more to do than intelligence. The consequence is that Her Majesty's inspectors report vast improvement. The schools are, individually, conducted on lines best suited to the locality. There we have just such independent action, under reasonable general regulations, as is responsible to a great extent for the excellence of the results we notice in this Catholic exhibit.

#### FREEDOM OF SPIRIT IN SCHOOL WORK.

We are glad to see this freedom illustrated in the matter of languages. It is not desirable that every language but the English should be banished from our common schools. On the other hand, we realize the difficulty of attempting much in this line. What this Catholic exhibit presents in modern languages is limited to simple exercises in German and French. Some of the female academies have full courses in both these languages; a few parochial schools have less extensive exhibits in German translations. It is a striking fact that some Irish-American boys who attend German schools are first in German. This occurs in a sufficient number of cases to make it deserving of remark. Furthermore, several schools show tests of spelling that seem to decide the question whether the study of English and German simultaneously is injurious to the pupil. In a large number of instances German boys spell in English more accurately than their American companions. As several branches may be taught in German or French as well as in English—catechism, mental arithmetic, history, etc.—it strikes us that where a pupil has already an elementary knowledge of a modern foreign tongue, it is unfair not to give him some chance to preserve and develop this extra language. It is a knotty question, but it deserves a solution. Americans are at a decided disadvantage when traveling abroad; as a rule, they do not speak any language but their own. At the present time several governments urge the study of at least one modern language besides their own. Americans should not be too far behind in this matter.

#### NATURAL SCIENCE BRANCHES.

In the department of natural science the general exhibit is not extensive. Advanced grades in some convents show fair work; in the same grade of boys' academies the display is better. The only normal college that exhibits has unusually good papers in natural philosophy and physiology. Several advanced schools have excellent collections of botanical specimens collected by the students. We fear that these schools will not feel encouraged to display their collections again. In several cases the specimens have been so roughly handled as to injure their future value. It is well to save time, but the desire to save should not permit examiners to open carefully arranged specimens and then leave them unclosed after examination. This and many other matters will cure themselves in time, but meanwhile the collectors must be satisfied with the assurance that several enthusiastic students have learned their first lessons in forming collections. To have so launched even one new searcher into the botanical field is to have made a mortal happy, even if at the cost of spoiled specimens and battered specimen cases.

Referring again to natural philosophy, and also to elementary astronomy, we think that these two subjects are not taught as generally as in former years. This is the more surprising when we recall the fact that so many excellent manuals are now published, and that instruments for illustration are so much cheaper than in past years. But, what is most surprising is the total absence of any home-made specimens of articles used in simple experiments.

We know that such collections exist in a few schools, but regret that no one has ventured to show them. This criticism does not apply to the sketches and designs furnished by some of the academies or colleges. One academy on the Hudson presented a very complete set of illustrations done with consummate taste and intelligence. All the practical work of this excellent school is equally good.

#### OBJECT-LESSON METHODS.

Those who have followed the progress of elementary teaching as seen through the educational expositions of Philadelphia, London, New Orleans, and Chicago must be struck by the sudden appearance or disappearance of certain features. As a striking instance, we may recall the subject of object lessons. For several years the educational journals were incessant in urging the importance of these lessons in developing the perceptive powers of children. Numberless groupings of objects were presented, stages of evolution from the crude material to the finished specimen were shown, everything that ingenuity could devise to attract the pupil's attention was done. In the New Orleans exhibition school collections were a most prominent feature; in Chicago the public schools as well as most private institutions had a few complete displays of the kind, while in the Catholic exhibit not more than a dozen schools showed anything like a serious attempt at such classifications. But one school outside the city, so far as we could find, has made a successful, detailed, and scientific collection of object lessons. In this school local industries have been studied, descriptions of visits made to these centers are furnished, and an intelligent grouping of the materials employed in these industries enables the examiner to get an excellent idea of the various processes involved in each. This school took up the study of object lessons on a scientific basis. The aim has not been to get a lot of things together and label them "object lessons." On the contrary, a specific end has been kept in view, limiting the study to local industries. These industries have been taken up in their natural order, a regular course of study established, and a systematized plan of visiting the industrial centers arranged.

The result has been, not a spasmodic effort to secure a short-lived though brilliant success, but a calm, progressive, intelligent arrangement, whose outcome is the splendid collection this school has brought together. Object lessons require teaching of the highest order to maintain their hold. Mere collecting of objects will not suffice.

#### ARITHMETIC—RECENT CHANGES IN TEACHING.

As yet we have said nothing about arithmetic, mental or written. For some years past a simultaneous attack has been made on what is supposed to be the unnecessary attention given to this subject. It is not easy to take sides consistently in a dispute that calls for such wholesale condemnation of what was done by teachers who were our superiors in the mathematical line, and who in many other respects, especially in the teaching of elementary natural philosophy, far surpassed us in their success. Perhaps too much attention was paid at one time, and is still being paid, to certain phases of commercial arithmetic that have lost their importance. But it is certainly incorrect to claim that mental arithmetic is receiving undue attention. On the contrary, unless we are much mistaken, it is the neglect of this most practical form of arithmetic that renders the teaching of written work so difficult. Among all the papers on arithmetic we notice very few in which mental calculations take the prominence to which they are entitled. Some teachers have been complimented on their methods of teaching the extraction of roots. From the cursory examination made

of these special claims we think that they are well founded. The teachers who use these methods should suggest that they be introduced into the text-books on arithmetic studied in their classes. Considered as a whole, the copy books of arithmetic are not remarkable for the excellence of the figures; the ruling is poorly done, and unnecessary use of colored inks does not improve the appearance of the solutions of problems.

The same criticism holds good in regard to the specimens of bookkeeping. As much of the colored ink used is of an inferior grade, and some of the paper is not well sized, the writing spreads, the ruling becomes blurred, and the entire work has an unkempt appearance. This is not the rule, but it applies to many exceptions.

#### PHOTOGRAPHY.

One of the chief innovations is the very extensive use of photography in the reproduction of groups, in the development of local history, and in the study of natural science. It is surprising, however, that so few teachers have employed photography in the teaching of penmanship, the preservation of original synoptic tables, and in combination with the phonograph for the teaching of elocution. In a few of the highest academies, especially in one or two, remarkable scenes connected with the early development of school property, the collections of specimens, and photographs of graduates are thus preserved. Much more could have been done to reproduce copies of military cadet corps, of military movements, etc. A few schools have camera clubs and do good service for various classes and associations by keeping a running collection illustrative of the chief events in school life. This feature of school illustration should be encouraged.

#### UNREASONABLE CRITICISM—CLOSING REMARKS.

The chief criticism, based upon a careful study, referred to the lack of completeness in the work shown by many schools. In these cases it was found that much of the work in those schools, though excellent in itself, did not fit into any general plan followed by the teachers. It was the opinion of many that there was an excess of drawing and a lack of ordinary school work. While this remark holds good in some respects, visitors should have borne in mind that drawings or sketches are, about the only class of work that could be hung on the temporary separations. Most schools had as much ordinary bookwork as they could well display. It might have been more varied in character, but it was sufficiently great in quantity. Several critics remarked that many teachers did all the fine work on the covers of the ordinary copy books; in most cases this fact was acknowledged, and the exact work done by the children was indicated.

Nearly all the old schools throughout the diocese did excellent work. There was a delicacy of touch in what they did that showed the power of good habits once established. In many cases work was shown from years gone by. This afforded an opportunity to compare old methods with the new. The number of teachers who presented extensive collections of notes of lessons was not great. Strictly speaking, this comes under the head of normal work; still, as an indication of the line of thought running through any particular body of teachers, such notes would be of more than ordinary interest. It is said that many attributed much of certain classes of literary work to the influence of one well-known educator. While this may be an exaggeration, it is certain that each teaching body has its characteristic methods of presentation of subjects. These traits would easily be noticed in the course of a certain number of "notes of lessons." The same holds true of individual teachers.

#### EARNESTNESS IN TEACHING.

Judging from the great number of teachers who were taking notes, and from the many questions asked about special exhibits, we feel certain that the greatest possible interest is felt in the principles that underlie the successful school work here



exhibited. With a closer study of school methods, and a closer examination into the plans and programmes followed by those who have made the most successful exhibits, there is no doubt but that Catholic teachers will become still more efficient. Our Catholic schools have shown their work; what that work is all have a chance to see and appreciate.

Well might Mayor Gilroy in his opening speech declare that "One of the proudest aims of man or woman ought to be to teach the youth of the country how to exercise the rights of citizenship when they came to man's estate."

"The parochial schools," he said, "are doing this, and, as the present exhibition shows, are doing other very great and noble duties." There were 10,000 children in the city who did not possess the means of obtaining an early education. There were 60,000 pupils who attended the parochial schools, and 18,000 attending private schools. He declared that if all these children were to be thrown suddenly on the public school system great confusion would result. "If this were the only benefit the parochial schools conferred, it would entitle them to the gratitude of the entire people of the community."

And with equal force did Colonel Fellows say in his closing address: "Go on with your work. It is protected from the skies. It means a blessing to earth. God, and the voice of all proper humanity, will crown it with an undying benediction."

### THE CATHOLIC SCHOOL EXHIBIT.

#### CHANGES IN METHODS OF TEACHERS.

Among honest teachers there is an earnest wish to get together, to learn from successful example how to do the greatest amount of work with the least useless expenditure of energy, with greatest positive results.

In the Catholic school exhibit of New York (which was to all intents and purposes the same as the Chicago exhibit) there were some features that struck us as being in the right direction and as being of real assistance in the very important feature of the best methods of presentation of elementary subjects.

In the use of illustrations drawn from everyday topics the exhibit was singularly rich. Most deserving of mention is the fact that very young children put together the parts needed in the illustration where such was feasible. These illustrations were particularly suggestive when applied to definitions of geography.

As we mention geography, it may be the proper place to state that this subject shows great variety in treatment. The use of colored threads played a large part in the development of illustrations. Great variety of wording was perceptible in the phrasing; freedom in the use of children's words was a striking feature in the best taught schools.

In United States history the best modern methods were to be found among the work of select schools and in some of the parochial classes. The combination or coordination of literature and history was generally perceptible. A very salient feature of the United States history was the comparison between the assertions made by Winsor and similar authorities in books prepared to meet the demand for Columbian literature, and that of American authors of accepted worth, whose works have been before the public for some time, and whose assertions, particularly about Columbus, had hitherto been unquestioned.

The use of synoptic tables, prepared by the pupils themselves, has become very general. Summaries prepared in the same way are also largely employed. These indicate original work. The same holds true of the tracings and sketches that many children added to their literary summaries.

Penmanship shows considerable improvement over previous exhibitions. Practical problems in arithmetic have, to a marked degree, supplanted the old-time form in which abstract numbers played so prominent a part. In girls' schools the "Bills of parcels," as the old arithmetics were wont to call shopping accounts, were largely

used. Home-made collections of plants, flowers, words, etc., added to the interest of a few schools; in a few instances pupils furnished an account of how the collecting had been effected.

In the industrial schools pupils appear to be well instructed in the handling of material so as to entail the least possible waste. The Catholic Protectory had a certain number of boys who carried on their trades in the presence of the people. The deviation from mere silent exhibition to actual work was an agreeable surprise.

Perhaps the most progressive feature of the school exhibit is the extensive use of photography. It is surprising to find the unusual lines in which it has been employed, offhand blackboard sketches, developments of literary or historical periods specially prepared by the teacher, the principles of penmanship—these and a hundred other topics have been reproduced by the pupils and preserved for future reference. The combination of reading and simple composition is another feature that deserves commendation. It has been carried out in a thoroughly logical manner in a large number of the boys' schools.

There are many other subjects, typewriting, phonography, bookkeeping, geometry, and mensuration, algebra, modern languages, etc., to which we might refer and that would offer matter for interesting discussion or remark, but we have mentioned a sufficient number of subjects to show that the Catholic exhibit deserved attention, and received it, from a large percentage of the earnest teachers of New York and vicinity. Perhaps the most pleasing feature of the entire exhibit was the friendly spirit in which the work was discussed by public-school teachers. It was a common thing to see black-robed sisters in earnest discussion with their trimly dressed companions on the great question of methods and means by which we all seek to become more successful in the great work of making the rough ways smooth and the narrow way wider for the youth of our common country. (I. C. N., in New York School Journal.)

## CHAPTER III.

### GERMAN CRITICISM ON AMERICAN EDUCATION AND THE EDUCATIONAL EXHIBITS.

CONTENTS.—*Introduction*—"The American system of education," by Prof. Emil Hausknecht—"The public school system of the United States," by Dr. E. Schlee—Three lectures: (1) "The educational exhibit at Chicago;" (2) "The school system of the United States;" (3) "Manual training as represented at the World's Fair," by Prof. Stephan Waetzoldt—"The congress and the conference of librarians at Chicago," by Constantine Nörrenberg.

#### INTRODUCTION.

The World's Fair, and the International Educational Congress held in connection with the Fair, brought to the United States a number of German, Austrian, and Swiss educators of high position and well-earned distinction. They not only carefully examined the results of school education on exhibition at the World's Fair, but spent weeks and months in a critical examination of our system of common, elementary, secondary, and higher education, as well as special, technological, art, and professional schools, for the purpose of reporting to their respective Governments upon the condition and results of education in America.

The United States had entered into competition with the civilized world in showing its educational facilities and their results at the World's Fair, and the European and other foreign educators who came to this country to study our schools, discovered peculiar features in our system that can not be found in any other country.

The German visitors reported in writing, and most of these reports have been printed in Germany, where they caused much interest and astonishment. It can not be said that these reports are in every case absolutely correct, on the contrary, they exhibit palpable errors; yet, it is remarkable with what a felicity these observers detect the characteristics of American culture, and with what directness they point them out to their countrymen. They find much to blame in America. But we notice the praiseworthy fact, that these men in nearly all cases found the causes, or sought for the causes, of things that appeared to them strange. This proved that they were accustomed to work scientifically, to think philosophically, and act honestly.

I. Dr. Emil Hausknecht, director of the second city Realschule in Berlin, who for many years was professor in the national university of Tokyo, Japan, published in the annual catalogue of his school the following report on American education. It is here reproduced in English version, only certain insertions and quotations are omitted (such as examination questions). He dwells on some features of American education that he considers an honor and a glory of this country, and points out some of its defects. The impartial, objective way in which he does this is noteworthy.

#### THE AMERICAN SYSTEM OF EDUCATION.

Report of Prof. EMIL HAUSKNECHT.

Principal of second city Realschule in Berlin.

For ðæm ðe ælc man sceal be his æmettan sprecan ðæt he spricð, and dôn ðæt ðæt he ðet.

May the foregoing words of good King Alfred excuse the incoherency and fragmentary nature of the following remarks. They are the result of observations and experiences, as well as of the study of accumulated printed matter, gathered on my



journeys through the United States during the summer and fall of 1890 and 1893. I have not as yet had the leisure to work them up systematically.

He who has had the pleasure of crossing the United States, leisurely observing what he saw, and who has had the privilege of finding in his various places of sojourn the kindest reception and enlightening expression of ideas on the part of leading persons in science and promoters of popular education; he who has seen with his own eyes, especially in the West, the innumerable palace-like institutions for public education, churches, libraries, and Christian association buildings for young people, and gymnasia for schools, and in a measure has learned the piety and liberality of their promoters and founders, will know that in that country, though it is partly still in primitive development, yet everywhere progressing with gigantic strides, and disregarding Old World prejudices, something higher rules than "filthy lucre," which, under the present circumstances of civilization, can scarcely be called "filthy" any longer.

A prominent preacher expressed himself during the Sunday services in Trinity Church, previous to the beginning of the winter semester of Yale University in the old and venerable Elm City of New Haven, as follows: "It is a passion for education, a noble eagerness for knowledge and culture that has become a perfect craze, that has seized the whole American people at present." Dr. W. T. Harris, the United States Commissioner of Education, said to me in one of our pleasant and instructive interviews: "It is a heart hunger for education, a ravenous appetite for culture that is felt in all strata of society, in the middle and lower classes of the people, as well as in the upper classes; it works like an elementary force, and urges onward and upward." We need not wonder that things sometimes are placed topsy-turvy in a country the people of which create everything through their own power and out of themselves, and it must be borne in mind that in the peculiar development of its conditions it lacks a centralized government, one that thinks for all, and guides the people even in questions of detail; a government in which the traditions of experienced and well-qualified experts is embodied; of men who are conscious of the object to be attained. Neither have the States of the Old World, moving in regulated conditions, always avoided mistakes in the domain of education, and it is these very States which have to overcome a system firmly established in order to do justice to new principles arising from special conditions.

The cause of this universal desire for education in America is partly found in the fact that the common school education is quite inefficient and inadequate. A general law for compulsory school attendance is not in existence, and an astonishingly large ratio of the population has grown up without any instruction in school. All the more intense becomes the consciousness of the want of an education in after years, particularly in a country where there are no rules and regulations for the preparation for professions or occupations. If with us anyone "changes saddles" (that is, his profession), his action is in most cases subject to the disapproval of public opinion, or to that of his circle of acquaintances. In America—at least as yet—everyone, even a common laborer, may become anything and everything, even President, if he understands how and has learned enough to make wise use of circumstances. It is quite immaterial how he acquired his knowledge, or whether he can by written testimonials prove to be in possession of such knowledge. It is not at all a rare case to meet men who, as boys, peddled matches, newspapers, and other things in order to support mother and sisters, and who at times, when they had saved enough, "did a little toward getting an education," until finally they had worked their way up to be social leaders of the people. Every inhabitant of that country has an exalted opinion (mostly exaggerated) of his own capacity, hence it is not to be wondered at that the intense aspiration toward an "education" for practical reasons permeates all the laboring classes. Every sensible workman, who likes to speak of the equality of all citizens, and yet instinctively feels the inequality caused by difference in social position, aspires to be, or at least wishes to be, considered a

gentleman in his appearance, manners, and actions. As a gentleman he does not drink liquor, and smokes little or not at all.<sup>1</sup>

The motives that urge the cultured and wealthy classes to a liberal and incessant participation in raising the level of education of the lower classes are quite different. They have long recognized that a constitution resting upon the principle of democracy, like the American, finds its greatest enemy in the ignorance and want of judgment of the masses, and believe that this danger may be met by popular education as high and extended as possible. To these political motives may be traced back (partly at least) the efforts made in behalf of advanced instruction for girls. The men are almost exclusively occupied from an early age in obtaining a livelihood; though, by life's experiences and the reading of journals, magazines, and books written in popular style, they endeavor to educate themselves, the average "schooling" the boys get is of a comparatively brief period; hence it is deemed advisable to secure for the girls—the mothers and teachers of the future generation—the benefits of a most thorough education.

It is of course plain that, aside from these political considerations, often exclusively philanthropic motives come into play which lead to liberal bequests for purposes of education.

After these general remarks a few features of the American system of education may be discussed. I have neither leisure nor available space to enter into the minute details of the entire system. It seems to me advisable, however, to touch upon a few points necessary for a general comprehension of the entire system before entering into a discussion of any separate branch. It shall be done briefly and without claim upon systematic arrangement.

There is no national organization of the school system, embracing uniformly the entire school system of the country; in fact, it would be impossible, owing to the unequal development of the separate States, which, taken together, have an area fifteen times the area of the German Empire. The Bureau of Education in Washington, a part of the Department of the Interior, is merely a statistical bureau of public instruction, without any authoritative or directive power. The establishment, maintenance, and organization of the school system are concerns of the separate States, and they devote themselves to this task with great zeal. Public opinion, conscious of the fact that the healthy development of the State depends upon a well-organized school system, tries to attract a large immigration from other States by establishing excellent institutions of learning. Furthermore there is a noble rivalry kept up among the States, which is the cause of there being few States that do not think their institutions the best in the Union, the "best in the world," or at least nurse a conviction that they soon will be.

The supreme authority in school matters is, in most States, vested in a State board of education, which endeavors to elevate the whole system of public education of the State according to a uniform plan, and whose especial anxiety is to promote the general and professional education of the teachers, both men and women. In some States the number of women teachers reaches the high proportion of 90 per cent of the total number. To the large cities, which consider it an honor to do as much as possible for education, the law grants almost complete liberty in levying school taxes; this liberty increases the "joy in giving" and the possibility for new, progressive measures. The highest degree of perfection of any of the numerous school systems may be found in Boston, or, generally speaking, in the State of Massachusetts. Comparatively well developed are the schools also in Minneapolis, St. Paul, Indianapolis, and Washington. A similar opinion may be held concerning entire States like Massachusetts, Connecticut, New Jersey, Minnesota, Iowa, Michigan, and others.

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<sup>1</sup> However, chewing and spitting seem to be allowed to a gentleman. Children, even young girls (but scarcely of the better classes), chew gum or nibble popcorn.



Immense sums are expended for the maintenance and elevation of the system of instruction, not only by the States and communities, but likewise through grand and liberal bequests and donations. Aside from colleges and a few other institutions instruction is gratuitous; some States, like California, Wisconsin, Virginia, Texas, Michigan, and others, have even free "universities," which, however, with the partial exception of Ann Arbor, actually rank as colleges. Appliances also are furnished free, and not only text-books, but everything needed in manual training and cookery, and in physics and chemistry, for which every pupil has his own experimenting and work table. With regard to the advantages of free text-books and the uniformity caused thereby, the opinions differ. Free schoolbooks for entire States seem to have essentially influenced the quality of the books by paralyzing the productive energy of authors. New and more methodically arranged schoolbooks are rare of late years. Gratuity of the entire instruction and free text-books and appliances belong to the many devices which have been resorted to in order to allure as many pupils as possible into school, and to keep them there, since compulsory attendance can not be enforced.

In theory America possesses the common school (*Einheitsschule*). After the primary school, intended for children from 6 to 10, follows the grammar school for children from 10 to 14; the continuation of this institution is the high school of three or four yearly courses, which is partly an institution for the preparation for practical life, and partly a preparatory school for the college. The grammar school corresponds more or less with the upper grades of our people's school of six, seven, or eight grades. It is fundamentally different from the English grammar school, which may be compared to our gymnasium, and like our gymnasium ("*Real-Gymnasium*" and "*Real-Schule*") stands entirely outside of the system of the common school. An American boy who has passed through the grammar school is said to have graduated, while an English boy who goes through the course with credit up to 14, is said to have passed the seventh standard. While thus, in theory, the course through the American common primary, grammar, and high school leads to the college, the facts do not correspond to this everywhere. The colleges distrust the education of the high school and, indeed, the transfer from a high school to a college is possible only when the former has observed the conditions of admission required by the college, and when it stands in more or less intimate relations to the respective college. Comparatively few high schools maintain such relations. Those high schools on the other hand, which are considered primarily preparatory schools for colleges, distrust the education offered in the grammar schools; so that some parents who intend their children to enter the high school, withdraw them from the grammar school before the completion of the course, and have them privately prepared for an entrance examination to the high school.

The colleges are a kind of intermediate institution between our gymnasium and university, representing the work of the upper grades of a gymnasium and that of one or two years at a university, as we understand those terms. They are mostly institutions with dormitories, lying remote from the noisy din of cities, surrounded by park-like grounds. In the colleges physical exercises are very popular. While, with few exceptions, no beer drinking or smoking is found, yet the student's life here is very gay, full of fun and pranks. To be sure, work is done here, and a great deal of it, for at the end of each of the three or four terms of the year an examination has to be passed. Unlike our universities, most American colleges have the purpose of transmitting knowledge. The chief object of our universities, which is to guide the students to independent scientific production, lies entirely outside of the scope of the college. But some colleges attempt this by retaining their own graduates, i. e., those who have passed the finishing examination after a three-years' successful attendance at college, and offering them in so-called post-graduate courses (in contradistinction to undergraduate courses) opportunities for scientific work. A few colleges admit only post-graduate students. Such institutions are called, at



times, universities. The term university is frequently given to other institutions that do not deserve it, and are not recognized as such in the learned world. Altogether there are nearly 400 colleges in the United States. \* \* \*

"Of the colleges (universities) Bryn Mawr is exclusively for women; three, Chicago, Cornell, and Ann Arbor, admit men and women on precisely similar terms to all departments of the university, both to the undergraduate and to the post-graduate courses; and one, Yale, admits without distinction of sex to the graduate courses, but not to the undergraduate courses. In the University of Pennsylvania advanced instruction is given in the graduate department for women, which offers all the courses that the university faculty of philosophy does. \* \* \* Some of the advanced courses at Harvard are given every year to women precisely as to men, through the Society for the Collegiate Instruction of Women, 'Harvard Annex.'

\* \* \* At Columbia (in New York) the register of students in the school of political science contains the names of women, and also that of the university faculty of philosophy; women are in attendance at Barnard College, a kind of an annex for women in Columbia College, in which, I remember to have heard with pleasure, lessons in Euripides, in Old English, in Hermann and Dorothea, and in French grammar."

The foregoing paragraph made us acquainted with another characteristic of the American system of education, the so-called coeducation, simultaneous instruction of boys and girls in the same class rooms, and in the same subjects,<sup>1</sup> in the primary, grammar, and high school, as well as in colleges and universities. Formerly coeducation was resorted to much more frequently in Germany than now. In the Western States of America it was first used as a makeshift, but it has in the course of the last ten years spread farther and farther East, and is now found in all the New England States, which are remarkable for their firmly-fixed institutions and high degree of culture. The most important of the higher institutions of learning in New England reject coeducation in high schools and colleges, I think, with good reason. In quite a number of States coeducation is practiced in all schools. Concerning the advantages and disadvantages of this mode of education lengthy and heated controversies have been filling the columns of the press.

As a makeshift coeducation is better than nothing. As a principle, it entirely ignores the needs of the separate sexes arising from the differences in the development of boys and girls. Boys and girls in the ages from 14 to 18 must be differently treated, both in regard to the intellectual and the emotional nature. Coeducation is possible, however, in America more than in Germany or elsewhere, because custom and education have given to the girl and the woman greater freedom and determination in their manners and appearance, and have also given them strong protection against encroachment and improprieties. Coeducation is possible in America for two other reasons: The week has only five school days, Saturday being a holiday, and the school day has only five lessons, of which one is usually a study hour. Besides, grammar and high schools require much less severe intellectual effort and a much more concentrated and simple exertion of the mind than is required in our secondary schools for boys. In the grammar schools foreign languages are not taught at all; in the high schools only two foreign languages are taught, of which the second scarcely proceeds beyond mere rudiments.

In modern languages I have found everywhere (with the exception of Boston, which certainly has the best schools) a method of instruction which beggars description, for it is a waste of time and calls for no intellectual labor on the part of pupils and teacher. The consequences of beginning the study of foreign languages so late are very serious. They are manifested in the very small amount of knowledge in the languages with which the student enters college, so that there he is frequently subjected to mere elementary exercises. The consequences are seen also in the defective linguistic-logical discipline of the mind, which perhaps more than the dis-

<sup>1</sup>Except in gymnastics and manual training; instead of this branch the girls have instruction in female handiwork, and, in the grammar schools, lessons in cooking.

cipline in mathematical forms of thought is a requisite of all profound intellectual progress, be that in linguistic or in mathematical and scientific branches. This discipline is especially necessary, in fact an essential requisite of independent intellectual work, and the present American method of beginning the study of languages is entirely inadequate. The other disadvantage of a defective linguistic discipline, namely, the want of thorough comprehension of the mother tongue in America, is compensated in most colleges by excellent exercises in the written and oral use of English.

Another peculiarity of the American system of schools is the extensive employment of women in teaching, not only in primary and grammar schools, where they are employed almost exclusively, but also in high schools, and at times in colleges. It is unquestionable that some women are gifted with special physical and intellectual powers, able to successfully cope in scientific equipment, methodical skill, and pedagogical tact with many of the best male teachers in (let us say, in order to remain on the firm ground of actual observation) Latin, Greek, physics, chemistry, and mathematics.<sup>1</sup> Generally speaking, the lower degree of physical power of resistance in woman causes a lower degree of executive ability. A more extensive employment of thoroughly prepared men in high schools would very preceptibly raise the level of these schools. But men are not numerous as teachers in America, not even in the high schools. Public life offers positions with much higher emoluments than those of the schoolmaster and professor. The one circumstance that comparatively few men devote themselves to teaching in grammar and high schools, reacts naturally upon the quality of the teachers engaged; but of course I do not mean to say that there are no thorough teachers in these institutions.

Generally speaking, it may be asserted that one kind of high schools, called English high schools, in which modern languages and natural science predominate over the classical languages, is, according to our conception, scarcely more than an advanced elementary or citizen's school. In these schools, if they happen to have one or two thoroughly equipped male teachers for one or two scientific branches, acceptable results are found. The Latin high schools seem to be better in every respect. Of course there are a few exceptionally good English high schools.

A peculiar feature of the American school system is the development which manual training has had. It is an acquisition made since the World's Exposition at Philadelphia, and an imitation of the Russian system, which was suggested by Dr. Woodward, of St. Louis, and has since spread over the whole Union. Manual training is now either given in special, technical, or manual training high schools, which are admirable, or has been made an integral part of the course in primary, grammar, and high schools, as, for instance, in the city of Washington. In the so-called manual training high schools, which are a third kind of high school beside the English and classical, ten hours a week are devoted to work in the shops, five to drawing, and ten to scientific instruction.

I must deny myself the pleasure of entering into the historical development of this interesting and important branch of instruction, nor can I state here the psychological arguments upon which it is based; but I will state that the growth of manual instruction as an organic branch of the public school system and the great popularity and progress of Froebel's educational ideas<sup>2</sup> (surprising to us as Germans, but very significant for America) has led to a complete revolution of didactics, to the so-called "new education," the education "by doing," in contradistinction

<sup>1</sup>One observation seems to me worthy of mention. It was made in Wellesley College. In a class consisting of some 20 young ladies studying mathematics, the students showed themselves so well acquainted with differential calculus that there could be no question as to their ability to use and comprehend it. This visit was made in company of the school superintendent of Berlin, Privy Councillor Prof. Dr. Bertram, whose quick observation and expert judgment aided me during a part of my journey in the fall of 1893.

<sup>2</sup>Dr. Haillmann, superintendent of public schools in Laporte, Ind., has earned a great and merited reputation by introducing Froebel's ideas, and thus improving the methods of school instruction.



tion to the old memoriter method. A further result of this instruction "by doing" are the independent exercises of the pupil in experimenting, mentioned before. These experiments are made, of course, under direction of the teachers in physics and chemistry.

For the preparation of teachers the States have their normal schools; for that of the three learned professions (theology, law, and medicine), divinity, law, and medical schools. Very few of these institutions require a college education for admission. Many of the medical schools shut one eye, if the candidate for admission has scarcely reached a degree of education required for admission to a high school. The Massachusetts Institute of Technology in Boston is a polytechnicum of the first rank. Its president is the renowned political economist, Gen. Francis Walker. Besides, there are trade and industrial schools. The Drexel Institute in Philadelphia is a very grand institution for art, science, and industry, and is richly equipped and well organized. It admits students of both sexes. Drawing and modeling—subjects which, though extensively taught in America, are but little developed—seem to be very well represented here. The main object of this institution for popular culture (this epithet is used in the true sense of the word) is the training of teachers; it prepares—(1) Teachers and supervisors of drawing in public and private schools; (2) teachers of science in high schools and academies; (3) directors and teachers in physical culture; (4) instructors in manual training; (5) instructors in cookery; (6) instructresses in dressmaking and millinery; (7) assistants in library work, i. e., mostly girls; the employment of women in the lower positions in libraries is a very extensive one in America, the land of public libraries. The American public libraries are distinguished more than the generous English libraries by facilitating and simplifying the use of books for the reading public by making the books accessible, by advising and guiding the readers in the selection of reading matter, and by making the use of reading rooms as comfortable and pleasant as possible.

For Indians and negroes an excellent institution exists at Hampton, Va., the normal and agricultural institute for negroes and Indians. I visited it in the fall of 1890. The young Indians of both sexes received here, besides instruction in the common school branches and religion, a training in trades, agriculture, female handiwork, cooking, tailoring, washing, ironing, etc. The negro children in the Northern States are taught together with the white children; in the Southern States, including even Maryland and the District of Columbia, they have their special schools. It was interesting to hear in a colored high school in Washington a 15-year-old negress translate Cicero's *Pro Milone*. The colored teacher of Latin, a graduate of Harvard, also spoke German fluently. The teacher of physics and chemistry, like the principal, a colored man, was a Ph. D., who had first studied at Harvard, afterwards at Heidelberg and Berlin.

Aside from some institutions established by the Catholic Church and other religious communities, no religious instruction is given in American schools. However, it can not be said that therefore an atheistic atmosphere prevails in school and society. Nowhere is religious life as active and intense as in America. I do not think, as is alleged, that this remarkably strong participation in religious life is a consequence of the separation of church and state and the exclusion of religious instruction from the schools. It is said that because the schools do not indulge in overfeeding their pupils with Bible verses and hymns (as is alleged to be the case with us), attendance at church is better and more voluntary, dictated by the desires of the heart. The conditions are altogether different in America. As everywhere in the Anglo-Saxon world, so it is, especially in America, that the mind (or should we say an aberration of the mind?) which ripened the reformation has again awakened and hastens, as Carlyle says, to a search for new forms in which the essential contents of Christianity are to be molded. Hence the numerous bequests for pious purposes; hence, also, the numerous churches and pulpits well supported by devout and chari-



tably inclined adherents of different sects; hence, also, the fact that a book like Robert Elsmere, by Mrs. Humphrey Ward, is found everywhere, and has eager readers and commentators wherever the English language reaches—and English is the universal language which spans the globe. This same spirit pervades a good part of the laboring people. I myself have heard on the commons of Boston and other cities on Sunday afternoons, in religious socialistic speeches addressed to all who were willing to listen, the ever-recurring idea of a socialistic Utopia that the world could not be improved unless the kingdom of Jesus were restored in its original form, and its social plans carried out.

Gymnastics in the primary and grammar schools has only recently found some consideration, but since these schools are without gymnastic halls, only calisthenic exercises, fashioned after the Swedish system, are given in the class rooms. This is made possible by the fact that every pupil has his own desk, and the aisles are wide enough for the purpose. The want of gymnastic halls for these elementary schools is perceived more generally now than formerly. Many of the high schools and colleges have such halls, which are magnificently equipped with Sargent machines and with apparatus for Swedish educational gymnastics. The Sargent machines, so called after their inventor, Dr. Sargent, the director of gymnastics in Harvard, are excellent, scientifically planned appliances for the development of strength of the different limbs and muscles. The gymnasias, often also used for military exercises, are rarely without luxuriously arranged bathing establishments and swimming basins.<sup>1</sup> Many of the gymnasias have a continuous inner gallery used as a running path for foot racing. Appliances for rowing likewise belong to the common equipment of many gymnasias for girls as well as for boys. These halls are frequently used between lessons for gymnastics on the apparatus, or tests of strength on the Sargent machines. Besides, most schoolhouses of large and middle-sized cities have spacious and well-ventilated play halls, which are covered (some are in the basement of the schoolhouses) so that the class rooms may be emptied and aired during inclement weather. In many institutions, especially in girls' colleges, anthropometric tables are kept in which the growth of the pupils and the increase and decrease in the strength of different parts of the body are recorded, which record is renewed and corrected after stated periods. This serves as a means for hygienic information and instruction concerning correct positions of the body. Every individual table contains a normal figure in black lines, on which, with colored ink, the figure of the body of the particular student is indicated in exact accordance with the measurements taken. This leads to self-discipline in diet and conduct, and hence is not without ethical and educational influence.

If, despite these partially model appliances for gymnastics, bodily exercises are not as well fostered in America as with us, it is owing to the fact that in America, as well as in England, open-air games occupy such a prominent place in the education of the young; especially has this been true in America for the last thirty years. Baseball, the national game of the Americans, which has much resemblance to the English rounders, and is played by nine persons, seven fielders, one pitcher, and one catcher, amuses young and old, in village and city, from May till October. Rowing and canoeing are diligently practiced; also football, which, however, owing to the severe winters, is commonly played in September, October, and November. Also for the Canadian game, la crosse, societies have been formed in some cities of the East; in 1890 I saw it played in Baltimore. Lawn tennis is equally popular with ladies and gentlemen, as in England; cycling (or bicycling), which is nowhere limited by police regulations as in England, is very frequently resorted to by ladies for recuperation. Angling and fishing, as well as excursions to the wood-covered hills and camping under tents, are quite popular sports. For such camping parties, consisting of from two to four young people, the White Mountains in New Hampshire seem to have a particular attraction.

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<sup>1</sup> In the Woman's College, of Baltimore, an institution maintained by Methodists and well conducted, there is also an appliance for drying the hair quickly.

A characteristic feature of the American high schools is the fact that the pupils are being made acquainted in every branch of study with the accessible literature relating to it and receive suggestions for the use of popular scientific works touching upon the subject. Works of reference of various kinds are found in great number in every high school. The cause of this procedure, especially important in the writing of essays on literature and historical subjects, is partly explained by the necessity of resorting to these books because of the often very inadequate knowledge of the teachers, which requires that the pupils be offered reliable material in reference books. It is partly explained, also, by the strong desire to educate for self-activity and independence; this is a tendency very prominent in English and American schools.

A thing worthy of imitation is the continuous blackboard in American schools, a blackboard, either of natural slate or made of slating fluid, attached to the four walls, except where the wall is broken by doors and windows. This gives ample room to teachers and pupils for blackboard work. Sketches, figures, etc., sometimes in artistic perfection, illustrating mathematics, geography, and natural history, can be retained on the blackboard for many a day; there is still room left for quotations from noted authors, for golden rules of life and proverbs, which may be renewed weekly.

The fact that in the courses of study in colleges such ample opportunity for the study of the Spanish language is given appears curious to us Germans. Though the well-established relations between the Union and the Latin-American States might explain it, it is reasonable to suppose that the recent popularity of Spanish as a study stands in close connection with Pan-American desires and aspirations to crowd out European nations, especially Germany, from commerce in South America. Looked at from a purely commercial standpoint, the study of Spanish has for the Germans, at present, a prominent importance. Thorough acquaintance with Spanish is fully as important to us as a knowledge of French. Far more important, however, is a thorough knowledge of English, the universal language that spreads over the whole world.

Another very excellent institution in some colleges may be mentioned. It is that of the sabbatical year, according to which the professors are granted one vacation year in every seven years with the provision that they use this year for the continuation of their own scientific preparation, and for a visit to the Old World in order to gather information concerning new methods of instruction. If we had such a sabbatical year, though only for teachers of modern languages in secondary schools, the instruction in modern languages would be promoted; what a wealth of new, fresh, valuable experiences and points of view might be gained for the profession of teaching, for the education of the young, and for the nation in general! Of course, for the American, who draws his salary during this furlough, a voyage to Europe, and a sojourn there, does not cause a pecuniary loss; but owing to the low prices of commodities in Germany, compared with the much higher prices of other European countries, the German teacher could not possibly live in foreign countries on his salary alone.

The various discrepancies and inefficiencies of the American schools, merely touched upon in the foregoing paragraphs, have not remained hidden to the Americans themselves. They form subjects of discussion in numerous societies, some of which, like the National Educational Association and the Modern Language Association, have members throughout the entire Union. They are also fruitful topics of discussion in numerous essays of the best American periodicals, especially the *Forum*, the *Atlantic Monthly*, the *North American Review*, etc. The recognition of the inefficiencies of their educational institutions and the present general enthusiasm for popular education, mentioned at the beginning of this report, have led the Americans to numerous new experiments for the purpose of elevating the school system of their country.



Among the various attempts of this kind, many of which touch upon the work of home mission, university extension and college settlements are foremost. The latter are in their fundamental ideas a certain renaissance of Christianity, a movement toward its early humanitarian aspects. College settlements are homes maintained by students and graduates, especially of women's colleges, in the darkest and most depraved parts of large cities. Young ladies who have passed through college, and who have inclination, time, and money, as well as health adequate for this very exhaustive work, agree to serve in these homes for several months. Here, by means of social entertainments of various kinds, such as games and plays, or by means of lending and discussing books, by means of lectures and instruction, visits and furnishing medicines, etc., the young missionaries try to approach and influence the hearts of all classes and ages, especially of children and youths of both sexes in the entire neighborhood, the ethical level of which it is the object to raise. "The settlement is a home full of open-hearted and intelligent men or women who approach the poor, not as visitants from another world, but as dwellers in the same block or ward, finding a pleasure (and it is a real pleasure, not a fictitious one) in the acquaintance of their fellow-habitants, and as claiming a share in the life of that quarter of the town, and a right to contribute whatever they may in the way of books, music, pictures, general information, or meeting rooms and acquaintances, to the well-being of the community to which they belong." The establishment of college settlements has been copied from England, where the best known settlement is that at 28 Commercial street, East London, known as Toynbee Hall, founded in 1885. In New York I visited the settlement conducted by Dr. Jane Elizabeth Robbins, No. 95 Rivington street, and also the Neighborhood Guild, 26 Delancey street, conducted by Dr. Stanton Coit.

University extension is a movement on the part of the universities (originally Oxford and Cambridge in England) for extending the possibilities of education to the great mass of all who live remote from university cities, and to all educated, semieducated, and uneducated beyond scholastic age who have a desire for advancing their education or are likely to have a desire of that kind awakened in them. It is said to be the object of the universities to offer a scientific education not only to a limited number of young people blessed more or less with wealth, but also to contribute directly or indirectly to the elevation of the intellectual and ethical level of the whole nation. The methods for reaching this eminently beneficial object are courses of popular scientific lectures given by traveling lecturers, systematically arranged, and the habit of absorbing and persistent intellectual occupation resulting from practical exercises connected with the lectures.

Absorbing and lasting interest is the object in view, and to secure this no detached lectures are given, but a subject is treated in a course, generally of twelve lectures. University instruction, as we understand it, differs from school instruction by never exhausting a subject, but acting as a stimulating and enlightening guide in the domain of investigation. Thus university extension also will stimulate and enlighten, it will till the soil, sow the seed, and leave the further growth of the plant alone, which in its gradual development will fill the whole life of its possessor. Since the general spread of the art of reading, an unscrupulous press poisons the masses politically, and an ever-growing novel-literature of trash and filth ruins them morally; therefore the people who desire to read, and are eager to learn, should be furnished with healthful nourishment, or guidance in selecting intellectual food. This guidance it is aimed to offer by means of lecture courses and practical exercises through university extension. According to the ideas of its promoter, it signifies a new stage in the history of mankind—an epoch-forming advance in civilization. In an address delivered November 19, 1890, at Philadelphia, by R. G. Moulton, a distinguished and successful university extension lecturer in England, it was said:

"And this is one of the great revolutions which, when you see them from a sufficient distance, make up our history. You know, if you go back far enough, there



was a time when religion itself was regarded as a thing for the few; only the clergy were to think on those matters, and the rest were simply to take what the clergy gave them. Then there came the great revolution of the Reformation, and the whole adult population insisted upon thinking for themselves in religious matters. Again, in Europe at least, there was a time when political matters were supposed to be the property of a class—a governing class—and the great mass of the nation had simply to obey. Then there came the vast political revolutions which have produced modern times, the essence of which is that every adult person considers that he has an interest in political matters, and a right to act for himself as a citizen of the body politic. Happily, we have no revolution this time, but a silent change coming over the body of the whole nation—here you will find it clearly marked, there you will find it only beginning—but anyhow, when recognized with an historical eye, it is only one of the great movements of our history, this tendency of the whole adult population to claim higher education, to claim the life education that belongs to university teaching, and to claim it as the inheritance of every good citizen. Just as in political matters, every adult person claims to be within the constitution, so by the new change coming over us every adult person will claim to be within the university, in the sense in which I have defined it.” \* \* \*

Indeed, the influence of university extension in America, to which it was brought from England in 1887, has become enormous, especially if we consider that it is not so much the acquisition of a certain amount of positive knowledge that is intended, as it is diversion of the senses from frivolous occupation, and a training to intellectual labor and ethical elevation of the whole man resulting therefrom. The university extension of the United States is organized in four centers, Philadelphia, Chicago, Chautauqua, and New York. The chief promoters of this magnificent movement are Prof. H. B. Adams (Johns Hopkins University, Baltimore), Dr. E. W. Bemis and President Harper (University of Chicago), Melvil Dewey (secretary of the American Library Association), Bishop Vincent, and others. Want of space prevents entering into details of the management and methods of this beneficial movement. \* \* \*

In no field of education have the Americans done such prominent pioneer work as in the education of girls and women, and of nothing are they prouder; indeed, in this respect they entertain the idea that they have left even us Germans far behind, though, generally, our system of education appears to them very good. But they overlook one thing, namely, that the education offered in our secondary schools for girls has a breadth, depth, thoroughness, and excellence which makes it nearly equal to an American college education, by which it may be surpassed in specialization, but certainly not in breadth and thoroughness of the knowledge it imparts. To that must be added the occupation with music, painting, and drawing, things which our girls study outside of the regular course, and in which they often gain great skill, or if not that, certainly a commendable comprehension of art in general. An American girl when pursuing such studies makes a specialty of it, and devotes her whole time to it. The very comprehension of music and art, an essential part of a general education, is poorly developed in American girls and women (of course I am speaking here of the average degree of perfection found among the educated classes), while our girls show great comprehension for art and music which have come to them only through great exertion and much practice. Besides, life with us offers much more intellectual enjoyment than in America, where nothing is finished, where culture is often quite immature, and where culture and barbarism are frequently found side by side. These intellectual enjoyments, so easily accessible in Germany but rarely offered in America, aid essentially in the education of our women. Another consideration is that our women are benefited, not only the upper but also the middle classes, by the incomparably better developed elementary education, and especially by the higher education of the men so generally found in Germany in all classes of society. Lastly, we must not forget that with us the percentage of girls

attending secondary schools is a considerable fraction of the whole female population of the country, and reaches far down into the lower strata of the middle classes. On the other hand, the percentage of American girls attending the high school, which can not be compared with our secondary schools for girls, is a very small fraction of the whole female population of the country.

Still it must be admitted that in a few of their colleges for women the Americans have surpassed us, and that they have happily avoided the dangerous rocks on which a higher scientific education for girls is so often wrecked, the danger to health, diversion from the duties of domesticity, the disappearance of womanly grace, and the growth of the bluestocking. The felicitous arrangement of short hours in grammar and high schools makes possible an equally rapid progress of girls and boys, short in comparison with the time and exertion required of *our* boys and girls. If we should insist on expecting of our girls the same amount of work we now require of the boys, the girls would be physically ruined under the enormous burden of work, hence the advocates of classical secondary schools for girls, an exact imitation of gymnasia for boys, will fail in their endeavors. The common opinion of physicians, educators, mothers, and all ladies who have themselves received a college education in America, goes to confirm the statement that the health of girls in colleges specially intended for their sex, is not only not endangered but promoted by means of wise alternation between intellectual and frequent physical exercises, such as walking, cycling, gymnastics, swimming, bathing, rowing. The physical condition of college girls is generally better than that of girls of equal age who remained at home.

These female colleges are munificently equipped with all possible appliances for promoting health, comfort of living, and study. They do not lack comfortably arranged, spacious workrooms, and well-filled libraries, in which a large number of professional journals, some European, is noticeable. These women's colleges are situated in the open country, in beautiful landscapes, have good atmosphere, and are usually surrounded by large parks. The cost for room, board, and tuition of a young lady in Bryn Mawr, the most expensive of these colleges, is annually \$400; in Mount Holyoke College it is \$250. The colleges have a number of half or partial scholarships at their disposal. The expenditures of these colleges are defrayed from the interest of funds and frequent bequests. The girls are induced to attend these colleges partly by the ambitious desire to hold an independent position in life in case of nonmarriage. Just as large, or even larger, is the number of those girls belonging to the best and wealthiest families who endeavor to occupy a more elevated position in society by means of a higher education, in order to surpass the so-called society girls in thoroughness of culture and serious aspirations, for the latter, rushing from one frivolous amusement to another, live only for amusement, and thus undermine their health. \* \* \*

All candidates for admission to Bryn Mawr are examined in (1) mathematics, (2) Latin, (3) history, English, or science (either in physics or chemistry, botany or physiology, or physical geography), and besides, (4) in one of the following groups: (a) Greek and French, (b) Greek and German, (c) French and German.

In all the subjects taught in the college the amount of work required is determined a year in advance. The examinations are exclusively in writing; the questions are submitted in print and must be answered within a given time. In the languages the students are required to translate passages from authors not previously studied. Thus, for instance, in June, 1894, the examination in Latin will be on (1) *Cæsar's Bellum Gallicum*, books I to IV; (2) Cicero, seven orations (*Pro Archia poeta*, *De imperio Gn. Pompei*, *Pro Marcello*, and the four orations *In Catilinam*); (3) Virgil, *Æneid*, books I to IV; grammar and composition; (5) sight reading. \* \* \*

If the candidate is admitted after having passed this examination, she is required to study three years before she can obtain the degree of B. A., and in addition to the studies mentioned she must take up, for purposes of general culture, a fourth



foreign language, trigonometry and stereometry, some branch of natural science and philosophy; also a certain group of special branches, such as Greek and Latin, or Greek and mathematics, or mathematics and physics, or history and political economy, etc., and pass all prescribed semiannual examinations. If she intends to continue her studies after having obtained the degree of B. A., she may study another year and obtain the degree of M. A. (master of arts). The degree of Ph. D. can not be obtained except after the expiration of three years following her degree of B. A. This doctor's degree can be secured only by means of a printed dissertation found satisfactory by the faculty, and an oral examination. The college offers many opportunities for such advanced learned studies. Special branches are taught there, for instance, Sanskrit and comparative philology, the Semitic languages (such as the Hebrew, Aramaic, Assyrian, Phœnician, Arabic, Æthiopian), Germanic languages (this department is conducted by Professor Collitz, of Halle), art and architecture, physics, chemistry, biology, etc.

Dr. Uhlig, editor of *Das humanistische Gymnasium*, quotes Professor Imelmann, of Berlin, who was in Chicago during the World's Congress of Education. The professor stated that he had listened with delight to expressions on the subject of Greek in colleges as a *conditio sine qua non* of the degree of bachelor of arts. Being called upon to give his views on American education at length, he wrote to the editor as follows:

"Though there could not have been a more attentive listener in the whole educational congress, assembled during the last week in July, 1893, filling with enthusiastic educators every possible and impossible space of the Art Palace of the young gigantic city, I am not able to reply to your kind request save in the briefest manner. Though being almost taken off my feet by the profound interest and enthusiasm in the men and the speeches they made, I neglected to make notes on the spot, leaving everything to the impressions I should and did receive. Only a most beautiful impression of the 'tout ensemble,' a picture in lovely dimensions of those days stands before my eyes fresh and encouraging. Yes, encouraging! In one of the fifteen sections deliberating at the same time in the different rooms, I not only listened but took part in the discussion. It was in the section of higher education; here I heard little or nothing of anticlassic theories and sentiments; certainly much less than was expected from the arbitrary views and presentations we get from America. At any rate the 'Trojans' did not seem to be represented very strongly. After Prof. W. G. Hale had delivered a lecture on the question whether Greek should be made obligatory for the degree of bachelor of arts, others likewise answered the question in the affirmative. The presiding officer desired to hear from the other side; that is, to give the opposing opinion a chance to be heard; whereupon a man, not an American, spoke from the 'other side of the ocean, not of the question,' and expressed his Hellenic credo with conviction and emphasis, and loud applause followed him and much private commendation. Should we not ere long make the discovery that classic education belongs to the things that follow the course of the sun, westward ho?"

II. Dr. E. Schlee, director of the "Real-Gymnasium" in Altona, near Hamburg, one of the members of the illustrious December conference appointed by Emperor William for the purpose of proposing changes in the management and organization of secondary education in Prussia, took part in the International Congress of Education in Chicago, and spent some time in studying American schools through reports, and seeking information at headquarters. On his return home he published the following report in the annual catalogue of his school, which report fully justifies his Government's choice in appointing him a delegate to the Congress of Education, where he took part in the discussions of superintendence and secondary schools:



## THE PUBLIC SCHOOL SYSTEM OF THE UNITED STATES OF AMERICA.

By Dr. E. SCHLEE.

Director of "Real-Gymnasium" at Altona.

*Motto:* "Knowledge and Liberty."

NOTE.—This short exposition of the public school system of the United States of America was suggested by a visit to the World's Fair at Chicago, which the author undertook in an official capacity, having been personally invited also to attend the Congress of Education held there. Besides observations made at the Exposition and personal communications, the sources drawn upon to a greater degree were the very ample official reports of the central Bureau in Washington and those of single States, together with that of the city of Chicago. To the author's regret it was impossible for him to be present at any recitations, as his journeys happened to be undertaken during the two months' summer vacation.

\* \* \* The peculiarity of nearly every branch of American civilization has originated in the circumstance that it developed on previously unbroken soil, and started from an already high degree of culture; in consequence it progresses by zealously taking hold of every new acquisition, and in many things rushes ahead of Europe, while it is still backward in the perfection of indispensable preparatory steps and foundations. Thus, for instance, the system of public reports and statistics, even in educational matters, is more strongly developed than with us. Each state and most cities annually produce whole volumes of reports; teachers in Chicago, for instance, are obliged continually to hand in written reports to their principals to an extent happily not the case with us as yet.

The reports of the Bureau of Education are exceedingly valuable, not only for the States, which are supplied by them with the dominant ideas for a similar development of its general system of education, but also for foreign pedagogues and politicians, to whom they offer richer information than can elsewhere be obtained. In our offices, it is true, ample reports and digests are prepared, but they are not published. Especially comprehensive, and prepared with objectivity and deep comprehension of the subject, are statements of the Prussian and German school systems by the specialist, Dr. L. R. Klemm; and in the last report the statement of the reform movement in Prussian secondary schools, in particular that of the conference at Berlin, reported by Charles Thurber, professor in Cornell University, at Ithaca.

On the whole, the American system of education still bears an English character, in its school organization as well as in management and methods of instruction. But the "public school" system is a purely national creation. These institutions, called public schools in contradistinction to private schools, and common schools in opposition to select or denominational schools, are almost similarly governed in all States of the Union.

They comprise the lower and higher schools and have three groups of grades, the primary, grammar, and high schools, each generally requiring four years. The first two groups of classes, the primary and grammar schools together, form the elementary schools, corresponding on the whole to our elementary or people's schools, with a similar difference between city and rural schools found in Germany. Cities and counties are divided into school districts, and each district has its school. In cities the primary and grammar schools are separate, and both are divided into classes according to annual or semiannual courses; as with us, in the country, as a rule, all children of a stated age are together in one class room. In cities and the larger counties, educational affairs are administered by school boards.

*The support of public schools.*—No tuition fees are paid in any public school of the United States, not even in the high school. The expenses are chiefly defrayed by a general (or State) and local school tax; a small portion is met by endowments and

proceeds derived from the part of the public land set aside for school purposes. In 1880, the entire costs were estimated at \$143,110,218, toward the payment of which the local school tax contributed \$97,000,000, from the State governments came more than \$26,030,000, irreducible funds almost \$8,000,000, and other sources \$12,000,000. The school tax is levied as a property tax on all inhabitants without regard to their taking advantage of the public schools or not. The revenue derived from the State tax is divided among all districts proportionally to the number of pupils, and thus a proper adjustment is effected between poor and rich districts. This is the only possible way for the South to have obtained schools in the poor districts settled by negroes. This general diffusion of education even over the whole South is the most commendable feature in the development of the American educational system. The Commissioner, with justifiable pride, draws attention to the fact that, in these States in which in 1870 not a single public school existed, now every child has the opportunity of acquiring at least the elements of education free of cost. In the Southern States the State government necessarily lends much greater assistance; in those localities it amounts to 52 per cent, exceeded in the Northern States by the local tax, which alone amounts to 70 per cent. Even here, as with us, the State governments during late years have increased their share in the support of schools; in Pennsylvania, for instance, the State paid \$2,600,000 in 1890, and \$5,000,000 in 1892.

The cost of all public schools, elementary and high schools taken together, amounted to \$2.24 per capita of the population; in Prussia the per capita was 6.50 marks, which, considering the comparative purchasing power of money, makes the costs about the same. Still, the amount in the more cultured States is necessarily greater; in California and Colorado, \$4 per head. For America, too, an additional amount would have to be included for private schools and for colleges, as these correspond to the higher grades of our secondary schools. The general average cost of every pupil is \$17.22, but the extremes differ widely; the largest being \$43 in Colorado, and the smallest \$3.38 in South Carolina.

*Education of the colored race.*—The position of the "colored race" differs in the schools of the North and the South. In the North, where they are few in number, colored and white children go to the same school. In the former slave States, where negroes constitute altogether 32 per cent, and in some localities even the majority of the population, a sharply drawn dividing line separates the schools. The white people of the South consent to only a very low local school tax; consequently, schools for the colored race, especially those in the country, are as yet little developed. Opinions on the capacity of the negro for education are most contradictory. But the colored race must have colored teachers, just as their communities have colored preachers, officers, and physicians. In 1890, therefore, no fewer than 39 normal schools, 24 theological seminaries, 71 high schools, and 22 colleges and universities had been founded for the benefit of the colored race. The colored male and female students of all advanced institutions taken together, numbered 25,540. The colored male graduate is said to have a preference for the pulpit because he has innate inclination and talent for preaching; the colored female graduate is said to give the first preference to preaching, the second to teaching.

*Private and parochial schools.*—In accordance with American principles of government, broad spheres of social life, subordinate to State jurisdiction in European countries, are left altogether open to the disposal of individuals; we can not but wonder that schools should to so great an extent be under State and municipal jurisdiction, and that proportionally there are so few private schools; 87.9 per cent of the pupils belong to public schools; only 12.1 per cent to private, including parochial schools.

The majority of private schools are select, i. e., for the well-to-do classes who do not care to send their children to public schools. They adopt the same plan of teaching as in public schools, and are mostly well equipped; they generally have a gymnasium, which common or public schools lack, and devote some time to games,



and in some cases, to military exercises also, as models in the Chicago Exposition showed. In other respects, their value differs. Their relation to State supervision is not yet defined. In the well-to-do North they are more numerous than in the South.

Parochial schools form another category. In a certain sense they are opposed to public schools. In America the line of separation between church and state is well defined; religion is looked upon by the State as a purely private matter. As a consequence, public schools not only exclude religious instruction, but reject even every local relation to a church organization. This has gone so far that the use of a schoolroom for religious instruction outside of class hours has been prohibited by law; and where Catholic children exceed in number, Catholic sisters have been forbidden to wear the religious garb in the class room, and to be called sisters. In this respect, however, the States have different customs. In New England, the Puritan-Presbyterian spirit has been preserved; in Massachusetts it is generally prescribed that daily instruction should begin with prayer and the reading aloud of a chapter of the Bible; however, children must be excused from participating, if their fathers so request. Four years ago a movement, which has since widely spread, started from the fact that in Wisconsin two Protestant teachers began instruction by reading aloud a chapter from the Bible, to which Catholic parents raised objections. The supreme court of the State declared the former to be illegal, upon which a National League for the Protection of American Institutions was formed; and the Bureau of Education investigated the relations of church and state in the chief countries of Europe, and collected all information appertaining to the subject from the principals of schools in the United States.

The different Protestant communities are satisfied with the existing order, as far as it goes; they have founded parochial schools, and try to replace religious instruction in day schools by Sunday schools. But a large number of children grow up without any religious instruction, so much so that professors of colleges complain of the ignorance among their adult students in Bible history and the Sacred Scriptures.

The Catholic Church, on the contrary, resolutely opposes the existing order; "12,000,000 Catholics are against the public school system." Only in a few Southern States where Catholics predominate have satisfactory concessions been made to the Catholic Church—either by giving assistance from the school fund, as in New Mexico and Georgia, or appointing sisters and Christian brothers to the position of teachers in the public schools. Where Catholics are in the minority, but numerous enough to have their own schools, Catholic schools are maintained exclusively at the expense of the church. While the educational exhibition of public schools of the United States was divided according to States, Catholic schools had a particular exhibition divided according to archdioceses. Catholics demand either exemption from the school tax or a corresponding support of their schools from the school fund. The renowned Archbishop Ireland thus formulated his request: Either support of the denominational schools for every pupil who passes an examination, or the appointment of denominational teachers who are to be allowed to impart religious instruction outside of school hours. \* \* \* These relations show that a complete separation between church and state does not overcome all difficulties, and that the United States still have contentions in prospect with the Roman Catholic Church.

Public schools differ from the German-evangelical parochial schools in one other particular. The public schools are to be the nursery of the idea of national union; and the individual character of the American nation and "all the different nationalities are to become imbued with the thoroughly American spirit." But the German parochial schools have some children who can not speak English fluently, and cultivate the German language from religious interests, without, however, neglecting instruction in English. For this reason, they are attacked and unfavorably judged by the Know Nothing party. The school board of the State of Massachusetts points to them as a great danger, because private schools nurture the spirit of caste,



widen the abyss between rich and poor, and engender labor troubles. But the following words express the actual tendency: "Shall we remain a people of many languages? Without a common language we can not become a nation." In Illinois and Wisconsin, too, the question was agitated in a lively manner, and in 1889 it was legally declared that parochial schools were not to be publicly recognized,<sup>1</sup> and that their pupils should be obliged to attend a public school sixteen weeks out of the year. Whoever has been in America knows how groundless the fear is, that German could assert itself as a second national language, like the French in Canada. Those demands were declared unjust and absurd not only by the New York School Journal, but in the Yale Review, and the law had to be revoked. The culture of the German language in school and church serves only temporarily for the preservation of the best individualities of German systems by which life in America is influenced, to its advantage of course.

In another way, too, the German language in the schools is a subject of dissension. Not only German, but French or Spanish is optionally taught in some cities for a few hours in public elementary schools, when a large number of inhabitants justifies their introduction. Knowledge of German is coveted in the North Central States, and not alone by the lately arrived German settlers. In Chicago, in 1892, German was studied by 39,462 pupils, of whom only 17,512 were of German parentage. But the principals, none of whom bear German names, as so many of the teachers do, alleged that the elementary course was disturbed by the study of German; the school board, with few exceptions Americans or Irishmen, opposed German for national reasons, hence the suspension of instruction in German was as good as decided upon last year in Chicago, although nearly half of the inhabitants of the city are Germans.

*Attendance at schools and compulsory education.*—American statistics satisfactorily show that in the United States proportionately more children attend school, or rather, more names are on the call roll, compared with the population, than in any other country of the world, even Prussia; 14,010,533 children are on the rolls of the elementary schools, whereas in Prussia only 5,390,860 of the required age are entered at school. Accordingly in America the proportion is 1 pupil to 4.4 inhabitants; in Prussia only 1 to 5.5. There must be a mistake in the statistics, caused either by a wrong calculation of the terms, or by duplicate enumeration necessary on account of changes of school, and having separate lists for the summer and winter sessions. The Prussian statistics, perfectly reliable, state that in 1891 only 945 children missed attendance for insufficient causes. It can not be attributed to the fact that America has proportionately more children; Germany is generally acknowledged to be a prolific country; whereas it is a well-known fact that families of the Anglo-Saxon race have few children, and the official report records a not only relative but absolute decrease in the number of children in the north Atlantic States. When we consider the crowded population of the large cities and the still undefined relations in the South and West, we are justified in presupposing a reversed proportion. Still more probable is this when we see the hosts of 10 and 12 year-old boys running about selling newspapers, and almost a certainty when we read that in 1892 the governor of the State of New York, for instance, deploras the fact that "thousands of children grow up without any education." The report of the school board of Chicago for the same year numbered 191,180 children between 6 and 14 years of age, of whom only 157,743 were entered on the rolls. Other and still louder complaints may be exaggerated.

Theoretically a kind of compulsory education does exist in the United States; the first measures to carry it into effect were taken as early as 1852 by Massachusetts, a State considered an authority on the development of education. It became general in Massachusetts only in 1878, and now exists in 27 States; in the South it is still unknown, and is elsewhere opposed on the grounds that it creates new transgres-

<sup>1</sup>Unless the instruction was conducted in the English language.—ED.

sions, limits the liberty of parents, gives the Government new power, and is altogether un-American, that is, opposed to the free institutions of America. But the rationale with which it was introduced meets this opposition in a thoroughly republican manner: "It is one of the fundamental laws of the State to compel parents to give their children an education which qualifies them to become citizens of a free State."

But its extent and the way it is carried into effect make compulsory education in America entirely different from that in Germany. First of all, much more time is spent at school in Germany. In America, a week has only five school days. High schools and most of the elementary schools of large cities have about as many school weeks as in Germany; but rural, and especially Southern schools, have not nearly so many. The official report for the whole of America averages one hundred and thirty-four school days to a year; the north Atlantic States with one hundred and sixty-six and the south Central States with eighty-eight days are the extremes. Four years [of two hundred days each] are given as the average time of attendance; the longest time being seven years in Massachusetts and the shortest two and a half years in a few Southern States. The law of compulsory education in no wise obligates for the whole time; eight years (from the sixth to the fourteenth or from the eighth to the sixteenth) have been decided upon for the course of elementary schools; still in most States 8 to 14 years of age are regarded as the limits of obligatory attendance, and the minimum attendance is required only for a limited number of weeks, twelve to sixteen, during a year.

The execution of the law makes even this limited compass illusory. Illegal non-attendance is punished by a fine of \$5 to \$20. But if parents are too poor to clothe their children decently the punishment clause of the law in many States is expressly declared inapplicable. Naturally most cases of nonattendance occur in poor families, for whom special provision has been made in charity or truant schools. These are exceptions, however. New York and Massachusetts are provided to a small extent only with these schools. Here and there the police do not sufficiently aid the school commission, consequently the reports of most States speak of the law as "a dead letter." School commissioners and superintendents prefer to do away with the power of punishment altogether, and apply moral means only. What can be effected in large cities in this respect, especially with incomplete rosters, is, of course, insufficient; but what has been accomplished in many places is worthy of recognition and may be looked upon as admirable proof of self-administration. For this purpose a special commission of citizens, truancy committee, or committee on compulsory education, has been formed. These obtain the lists of truant from schools, and endeavor to influence the parents either personally or by means of officials. In 1892 they made 12,906 investigations in Chicago; in 1,356 cases they could do nothing on account of the indifference of the parents and incorrigibility of the children; 7,592 children were taken back to school for a time, and 1,633 were induced to go to night schools at least. In New York the commission has 12 officials to execute the law. During 1889-90, 16,526 cases were carefully investigated and 3,590 truant taken back to school, many of them more than once.

It seems strange to us to see the attempt of healing homeopathically the malady of truancy, i. e., irregular attendance (or "playing hooky"); but that is being tried in other places besides Chicago. It is prescribed that as soon as a pupil misses two whole or four half days without permission within four weeks, the parents are notified in writing; if the child has missed six half days he is expelled from school. He can not be readmitted until the father has appeared before the inspectors and promised regular attendance. In the last year 3,670 children were thus temporarily suspended, while only 164 were suspended for bad conduct. A child can not change schools ad libitum; each child must attend the school within its own district. According to personal information these means are said to be very effective; of course, only with parents who attach any value to education. In many cities, to lay hold of



children running about in the streets during school hours has been tried, but many courts have declared it to be illegal, as there is no warrant for arrest.

In late years laws have been passed to restrict the employment of children in factories while they should be attending school; the employment of children in factories is now made dependent upon permission granted by the school commissioner. In 1892 this permission was given in Chicago to 1,077 children, aged between 10 and 13 years; 173 of them had been abandoned by their parents.

The result is that reports on attendance are much more modest than those on enrollment. Only 64 per cent of all pupils enrolled really go to school; on an average a pupil attends school only eighty-six days out of the one hundred and thirty-four average school days. In just appreciation of the better conditions in Germany, the official report remarks that no class in that country is uneducated; no ragged or begging child is seen on the streets of its cities, as is the case in America.

In regard to the short time of attendance at rural schools, Americans content themselves with the fact that the children after all learn to read, and that newspapers serve as a means for further progress in education. Americans, and especially the American laborer, reads the papers much more regularly than we do. Everyone reads his paper early in the morning, whether in railroad or street cars; the laborer reads his during dinner hour or of an evening while resting on the benches of the squares and parks. It is very desirable that these papers offer something better than their usual spicy, piquantly illustrated articles on scandals.

*Coeducation.*—Coeducation is not a general, but an extensively found, peculiarity of American public schools. It is not as with us the custom only in primary and rural schools, but in the city grammar and high schools as well. Neither are the sexes separated in the normal schools, colleges, or universities. In Chicago coeducation is general; in Boston and New York the sexes are educated together and separately. It was a strange sight for us to see even in photographic representation 12, 13, and 16 year-old boys and girls sitting side by side, or standing in mixed rows for calisthenics or wand exercises. It must be remarked that, where instructed together, they have separate seats; as a rule the teacher is a woman, even in calisthenics. All other apartments, including playgrounds, are not shared by boys and girls. The advantages of coeducation are not undisputed; strong objections to it have twice been advanced from Boston. Ten years ago Dr. Clarke revived the much mooted question whether the better classes of American women are good housewives and mothers. The Commissioner of Education compared reports from 300 large and small cities, and all were in favor of mixed schools. He then recommended them for this reason: "Education should prepare us for our future life; and if we must live together, separate education means changing the natural order of the human household."

Later on, Dr. Philbrick asserted that the particular form of education adapted to each sex could not be easily applied in coeducation. This objection could be met by the commissioner with the answer that he had had no experience in mixed schools, and in regard to hygiene, statistical investigation showed only favorable results. The encouraging experiences of Norway and Finland in regard to morals were reported at the same time with a reminder of the unsatisfactory effect of convent education in France.

The author was assured by a teacher, well informed on this subject, that coeducation exerted a favorable influence on deportment, mutual behavior, and discipline. Germany perhaps chooses the right medium between France and America; but when we consider how healthy, as a rule, the companionable intercourse between children of families friendly to each other is, we need not look upon the American plan as hazardous for us, especially in small places, where outward circumstances make a union desirable, and as long as it does not interfere with the distinct aims of instruction for each.



Discipline is not so strict as in Germany; formerly corporal punishment was in vogue, but it is now generally forbidden. Incarceration does not seem to be customary. Where admonition fails, the only means employed are suspension from school or transfer to another school. The principal has a right to suspend a pupil for a month; the superintendent for a term. The American method of instruction, on account of the frequent reciting of single pupils, gives rise to much temptation for disturbance and confusion, about which many complaints are heard.

*Subjects of instruction.*—The studies of the public elementary schools in cities are, in the main, the same all over the country; but the number of hours devoted to each study varies greatly. Most time is given to reading, as the contents of the readers are used as matter of instruction. Those used in the intermediate classes chiefly treat of natural sciences; those in the upper classes of history. Half of all the time is occupied by the study of the English language, reading, orthography, grammar, and writing. Complaints are numerous because spelling takes up so much time. Technical grammar is studied only during the last two or three years. Very great importance is attached to arithmetic, to which five to six hours a week are allotted. The course formerly included commercial and stereometric arithmetic; but it has been curtailed from time to time. Algebra is begun in the eighth grade in a few cities only; geometry is rarely taught except in the high school. The natural sciences are included from the first to the eighth grade. Instruction is demonstrative and practical, not systematic, and according to present plans anticipates the development of the child in years. It comprises botany and zoology, geography and astronomy, meteorology, physics, and the elements of chemistry. Great stress is laid upon physiology and hygiene, the discussion of the circulation of the blood, the bones, muscles, and nerves; the brains of brutes and man are compared as early as in the second grade, and the comparison continues during two or three terms, always, of course, according to practical points of view.

Geography is studied at least to the same extent as in Germany, two or three hours a week. History is limited to that of the United States, the short period of which permits a comprehensive course, even by devoting only a few hours a week to its study. In late years special study of the civil government of the United States and of the particular State in question has been introduced in connection with the closely related study of history, the different departments of the law being thoroughly expounded from their historic foundation. This is probably the reason why in America the mass of the people have such evident respect for the legal status of the land. It seems "American" to us that in a model course (that of Philadelphia) even the salaries of offices have been included.

Drawing and singing are included in the course to about the same extent as with us; physical culture, particularly calisthenics, too, but the necessary equipments for physical culture are wanting.

Finally, the study of temperance, essentially American, is legally prescribed in 34 States, except in the most Southern States. In 29 States no teacher receives a certificate of appointment unless he passes the examination in physiology and temperance. In this case, too, State reason (*Staatsraison*) instead of humanity dictates the rule: "A vigorous mind in a strong body can do more for the State than a weak one. Public schools are maintained by the State; hence the State can demand that what is to its benefit shall be taught in its schools." The appropriate chapters of the textbooks on physiology and hygiene form the basis of instruction. At the examination for promotion, questions to be answered by girls and boys 10 years old are, for instance, "How can we prove that nicotine is a poison? Why are cigarettes particularly poisonous? Is alcohol nutritious? Under what names is alcohol drunk? What is the effect of drinking beer?" etc. It must be remarked, however, that this study meets with decided opposition; on the one hand, it is declared useless as long as most teachers are not able to instruct otherwise than by allowing the pupil to memorize what is found in the text-book; on the other hand, it is considered an error in pedagogics to acquaint children with vices as yet foreign to their thoughts.

*High schools or secondary education.*—High schools, following immediately upon grammar schools, also require for the most part four years of attendance. They admit the pupils who have left the elementary schools with a certificate, or can pass an examination for admission. Their course has a rather more scientific character, and includes even the beginning of foreign languages.

Any positive statistical comparison with the Prussian secondary schools, despite the rich materials furnished by both sides, can not be carried out, for the American high schools correspond to the higher grades of our so-called middle schools, our higher schools for girls, and the intermediate classes of our high schools combined. The number of their pupils, nevertheless, is proportionally smaller than that of the Prussian schools. If we consider boys only, and contrast a fairly exact estimate of the pupils of the intermediate classes of our high schools and the highest classes of our middle schools with American high schools, the average in America is 1 high school pupil to 736 inhabitants; in Prussia, 1 to 586. These high schools are very different from the well-defined secondary schools of Germany; they include every school, even the smallest, whose course of study goes beyond that of the grammar school. Thus there are 2,526 public with 202,963 students, and 1,632 private high schools with 74,931 students, averaging 3.6 teachers and 80 pupils.

But the most noteworthy fact—here, for the first time, we touch upon the most important peculiarity of all American schools—is that the number of girls in the high schools far exceeds the number of boys. There are 116,351 girls and only 85,451 boys. What is more characteristic still, is that of the proportionately small number of graduates there are twice as many girls as boys, namely, 14,190 against 7,692. Boys enter business very soon, in which a higher education is considered of no value, while the daughters of well-to-do parents attend the higher institutions of learning for the sake of higher culture, and girls who are not so well situated need higher education to practice an independent vocation, particularly that of teaching.

The high school course includes, besides English and literature, Latin, Greek, French, German (Spanish, too, here and there), algebra, geometry, physics, chemistry, universal history, drawing, and singing. The courses of the different schools are by no means the same, and indefinite on account of the studies which are left optional. High schools are designed only partly to prepare for colleges and universities; many pupils leave after a brief attendance. In the year 1889-90, as stated before, 85,451 boys and 116,351 girls attended the public high schools; during that year 7,692 boys and 14,190 girls left school with a diploma. In all classes together, 14,969 took the classical and 14,320 the scientific course to prepare themselves for study at universities. To meet the different ends in view, the course is shaped to be a little more classical, or a little more scientific than the others, or simply offers a general English education. In larger institutions these different courses are combined. Convinced of possessing the universal language, "the language of the world," Americans do not attach as much importance to the study of foreign languages as we do. The study of no modern foreign language is obligatory. In the scientific course only one foreign language is required, it being Latin, German, or French. In the classical course Latin is obligatory; the other languages are optional. Greek is taught only in the two or three higher classes, the other languages in all four grades. Four or five hours are devoted to each foreign language a week. Occasionally, single studies, such as calculus, trigonometry, history, physiology, and bookkeeping, are optional. The official report of the year 1889-90 gives the following statement: Latin was studied by 34 per cent of all the pupils; Greek by 3 per cent; French by 5.8 per cent; German by 10.5 per cent; algebra by 45 per cent; geometry by 21 per cent; physics by 22 per cent; chemistry by 10 per cent, and general history by 27 per cent. These figures do not give a true idea of existing relations, as not all the studies are taught in every one of the four grades, and the whole number of pupils is included in the calculations made. The proportion between the numbers of male and female pupils in the participation in these studies corresponds almost exactly to the pro-



portion of the sum total of pupils, from which the remarkable fact is deduced that in America about twice as many girls as boys learn Latin, 41,633 against 28,788. But in Greek, which is studied by about one-eighth the number of those studying Latin, the number of boys is twice as great as that of girls.

The higher private schools (academies, seminaries, institutes, colleges) have on the whole the same organization; they have about the same number of male and female pupils. So far as their self-assigned task of preparing for colleges and universities is concerned, they stand higher than public schools. For some time university-colleges have been gradually raising their standard for admission in Latin and Greek, so that it is difficult for public high schools, with their broader but less profound education, to meet the requirements; these preparatory schools limit their course accordingly to classical languages and mathematics. The division of public high schools into a classical and a scientific course meets with decided opposition from the advocates of a uniform system similarly applied to all schools. The correlation of these schools with the universities—in other words, secondary education with superior education—is not as yet as definitely arranged as with us.

There is no doubt that the fundamental idea of the strictly uniform, or common, system is in the main correct. Americans, not hindered by any existing conventional order of society, could intelligently arrange their schools according to pedagogical and political ideas. Those thoroughly acquainted with the subject readily acknowledge the superiority of German schools in other respects, but always revert to, "But our system is better." The elementary school appropriates entirely too much time. Not to begin instruction in foreign languages until the fifteenth year must stunt, or seriously retard, the success of its study, the more so if more than one language be begun at the same time. Just because the right to one year's service in the army (with us a great inducement to secondary study) does not cut a figure in the calculation, and because aspiration for higher studies alone induces to entrance to the high schools, it would be better not to keep the ambitious back on account of the others, but rather to begin the high school course at about the twelfth year of age.

The Commissioner of Education justly remarks that in German gymnasia the study of ancient languages is begun so early—at 9 years—that pupils who attend the higher burgher schools find a barrier in their way if they intend to go to the university. The want of an easy transition to higher education is a serious error of the German system. The right mean in this case, as has been said, would be found between 9 and 15.

Furthermore, a definite course of study and uniformity of education must necessarily be disturbed by the introduction of too many optional studies. A division into two essentially different courses is based upon the necessities of the case, and is found among all civilized nations; we may even undertake a tripartition; but in these courses the plan of instruction should be uniform and positively defined. Otherwise, as was affirmed by Americans, it is a difficult task to arrange the timetable early enough.

American teachers who have a thorough knowledge of German schools have expressed the opinion that the graduates of high schools are three years behind the German graduates in the amount of knowledge acquired. The causes assigned for this are: (1) The difficult English orthography; (2) the complicated arbitrary weights and measures; (3) the shorter terms or school year; (4) the want of professional teachers. The causes may also be traced to the organization we have discussed. The opinion of another American teacher is probably more to the point. According to him, "the American public school can learn very little from the higher burgher schools of Europe, but American higher schools can learn a great deal from foreign universities and secondary schools leading up to them. What they do know they have learned from Europe." What remains for Americans to do is to decide upon correct fundamental principles and act accordingly. One of the most important



causes lies in the method of instruction and the qualification of teachers, closely related with one another, which we are about to consider.

*Methods and text-books.*—The American method of instruction, having taken the French and English mechanical memorizing for its model, differs essentially from the German. It aims not at comprehending and mastering a subject through the understanding, but at the acquisition of a complete presentation through the memory. Consequently instruction is defined less by the teacher than by the text-book, which is learned almost by heart. Most of the time is taken up by daily questions and answers and marks are given for the recitation. The book contains a number of questions with answers attached for recitation. Examinations for promotion in class, as well as teachers' examinations, consist, for the most part, of a number of such questions and answers, so that with diligent application and a good memory even an inferior mind can easily pass them. Be the books never so good, such instruction will hardly lead to the development of the intellect and to a free mastery of the subject. The stacks of pupils' work at the Exposition in Chicago contained excellent work in geography and the natural sciences, especially physiology; the explanatory drawings were particularly good and appropriate, but the finished form, and at times the almost identical wording, betrayed that they were chapters of the text-book committed to memory. American teachers are by no means ignorant of this deficiency in their method. Many objections have been advanced in different reports, but the method is a natural outgrowth of the whole school system. In cases where schools or a few teachers have adopted the German method they and their pupils appear at a disadvantage at inspections and examinations arranged according to the text-book method. Naturally the drawback is more evident in higher than in elementary schools. Generally the teachers have no scientific command of their subject, and in their dependence on the text-book do not distinguish between essentials and subordinate facts. According to the Massachusetts report, many teachers of geometry are dissatisfied with the memorizing method.

The Commissioner of Education evidently favors the German method; but he tries to bring out the good points of the American too; and, as he likes to philosophize, he endeavors to connect it with the national character. "The text-book method," says he, "offers decided advantages for facilitating instruction. By exacting the acquisition of the contents of the book it becomes easier for the teacher to occupy the pupil's time regularly at home. The pupil does apply the memory more than the higher intellectual faculties; but then, he can be made accountable for this mechanical work much more easily than for work done by means of the reasoning power; moreover, the mechanical work is a kind of intellectual discipline and exercise for the will. The less gifted pupils may fare better than in Germany; for what is acquired without being understood at the time can always be applied later." Even in memorizing grammar (overcome by us at least in principle) he discovers an advantage which the eulogist of a formal education attained by Latin grammar might turn to account. The positiveness of the rules, many exceptions, numerous long paradigms and queer idioms are of course only a meager exercise of the intellect; but it is also a discipline of the will, peculiarly adapted to accustom one to the observation and discreet consideration of the rights and privileges of our fellow-citizens, and to equitable assertions of personal rights. A superstitious respect for their orthography obliges English-speaking nations to memorize mechanically, which, on the other hand, influences all that rise from a state of perfect ignorance to a conservative way of thinking. The full scope of intellectual freedom which the German youth enjoys at school counteracts, so to speak, the outward dependence on the Government, which in its surveillance, like Providence, surrounds the citizen as with a wall.

The text-book plays an important part in school administration, too. Its introduction is generally decided upon by the school board, who are also instrumental in purchasing it. Great diversity, however, prevails in this respect. The greatest

liberty is allowed in Alabama, where every teacher has his own text-book, and introduces it. "According to which text-book do you teach?" is the most important question leading to his appointment. It is said that in some States its use is dependent upon the rings formed by booksellers. California goes to the other extreme. That State controls not only the selection but the introduction and even the manufacture and sale of text-books. As our own management seems to be inclined in this direction, it may be remarked that many objections are raised to it in America. At least a free competition in the making of text-books is to be desired. In Chicago the school board and booksellers agree to a contract in which the price and finish of the books is defined. Every alteration in the text-book is dependent upon the approval of the board.

In many Northern States the text-book is either loaned or given to the pupil free of charge. The expenses in Massachusetts have thereby been increased about \$400,000. The advantages and disadvantages of this custom are being much disputed throughout the Union.

*Male and female teachers.*—If in every office the chief factor is the man, and in school the teachers, we have come to the weakest point in the American school system—professional teachers are wanting. That is to say, that most teachers are deficient in the requisite scientific and pedagogic preparation for their vocation. The greatest number are women, and comparatively few make a profession of teaching.

According to the American way of looking at things, no importance is attached to the technical preparation for occupations and vocations or professions. Professions are changed according to advantages or opportunities. In annual reports we repeatedly meet with complaints of the fact that the teachers, men and women, have little or no normal or scientific education, and that they must be appointed without regard to the necessary knowledge and pedagogic preparation.

At a superficial glance America does not seem to lack normal schools and seminaries. Although the oldest seminary was founded (in Massachusetts, at Lexington, of Revolutionary fame) as late as 1838 there are now 135 public and 43 private normal schools in the United States, numbering, collectively, three years ago, 34,440 pupils; proportionately more than in Prussia, which two years ago numbered only 10,836 normal students, not including those of the private normal schools. But the difference is reversed by firmness of purpose and a fixed order. Whereas in Prussia all normal school students, about 3,600 a year, graduate after having taken the entire course; in America, in 1890, only 5,237 passed through all the classes. This number lacks about 2,000 in proportion to the number in Prussia. On account of frequent resignations, the yearly demand for teachers in America is astonishingly great, one-third of the number needed annually can scarcely be met by the normal schools. Massachusetts has the best provisions for a normal education, nevertheless in 1892 only 3,267 out of the 10,965 teachers actively engaged had graduated from normal schools; a further number of 792 had attended a normal school for some period of time. The others had in one way or another prepared themselves to pass the teachers' examination. As with us different degrees of diplomas are obtained in the examination, so in America teachers are qualified for only from two to four years, after which time they must pass another examination. The reporter from Massachusetts consoles himself with the fact that now 80 per cent of all public schools are under professional supervision, and that the school inspector can give assistance to the teachers. Such is the state of affairs in the Northern States. In the Southern States it is still more unfavorable.

Teachers of high schools have, as a rule, graduated from high schools; and for the most part have for a time attended a college, a university, or a normal school before taking the teachers' examination. Generally speaking, however, the situation is about the same with them as it is with those of the lower schools.

Not only in our judgment, but according to American educators, the second unfavorable peculiarity of American schools is the extraordinary preponderance of female



teachers, necessarily surprising to anyone who, for the first time, receives accurate knowledge of the facts in the case. The proportions of the total number do not seem so dissimilar. In the year 1890, out of the 363,935 public school teachers, 125,602, or 34.5 per cent, were men; 238,333, or 65.5 per cent, women. In Prussia, excluding the secondary schools that have male teachers only, the proportion is 58,464 male to only 13,337 female teachers; or, if we include all special teachers, particularly the 39,764 female teachers of handiwork, there are 75,518 male to only 53,202 female teachers. We might be under the impression that the imperfect conditions prevailing in the South and West bear the greater burden of the fault. The case is contrariwise, for the further the school system has developed, the more female teachers there are. In the North Atlantic States only 20 per cent of all teachers are male; in the South Central States male teachers form 57 per cent. Massachusetts and Arkansas, with, respectively, 9.9 and 68.5 per cent, are the extremes in these groups. Chicago in this respect, too, is about the most American city. In 1892 it numbered only 219 male to 3,081 female teachers, only about 6.6 per cent, while the whole State of Illinois reached the proportion of 27 per cent male teachers. In the public high schools of the United States the proportion is more favorable, the 40 per cent of male teachers corresponds exactly to the proportion between the number of male and female pupils. The rule seems to be that boys are taught by men and girls by women. But 15 and 16 year old boys may be found who are taught by women, and not only where coeducation prevails. A photograph of the second class in a high school of Maine, the pupils of which were 15 and 16 year old boys, shows them practicing calisthenics under the direction of a female teacher.

The employment of female teachers in public schools is supposed to have started in Massachusetts on account of the war of secession. As young men were called to military service female teachers were resorted to for substitutes. After the war there was such a dearth of men in industrial pursuits that the retention of female teachers was a necessity. That may all be very true, but the fundamental cause is a continuous one, and lies in existing circumstances. During late years the number of male teachers in Massachusetts has decreased by 1,776; in Pennsylvania in one year, 1888-89, the number of male teachers decreased by 812, and that of the female teachers increased 1,048. The near future is illustrated by the fact that the latest report on attendance in normal schools shows 93 per cent female pupils for Massachusetts; 99 per cent for Connecticut, and almost 100 per cent for New Hampshire.

This state of affairs is connected with the frequent changes and instability of teachers. In Maine, some time ago, four years was found to be the average time of service. The report of 1892 on the high schools of Washington [D. C.] remarks that with few exceptions all professionally prepared teachers who had occupied their positions four years ago had resigned to enter other more lucrative positions. Better opportunities are offered not only to male but to female teachers, who also give up their positions to enter upon married life. Of the 28,000 positions connected with the Federal Government in Washington, not fewer than 11,000 are held by women. Even well-to-do young American women, generally highly educated, well informed, and at the same time enterprising, prefer to spend a few years in teaching rather than await their future inactive. The official report condenses all this in the mournful remark: "In the United States the profession of teaching seems to be a kind of waiting room in which the young girl awaits a congenial, ulterior support, and the young man a more advantageous position."

The causes of this are of an intellectual and a material kind. The report of the Commissioner of Education remarks somewhere that an educational atmosphere prevails in all Germany; so we might say that a business atmosphere prevails throughout America, as far as the men are concerned. Acquisitiveness and a spirit of enterprise in a boy are encouraged from the very beginning by education and example. As no time is left to him for an extended education, the vocation of teacher is naturally altogether foreign to his thoughts. On the contrary, girls withheld



from domestic activity at home acquire more and more taste for the intellectual. Women and young girls form the majority of the audience at scientific lectures, congresses, etc. Teaching offers the opportunity best adapted to them for public activity and, at the same time, the most honorable mode of earning a livelihood. Thus, there is a steadily increasing influx of young girls into the profession of teaching. That is only a part of the whole movement—the appearance of women in public walks of life, heretofore reserved for men—the more important for us, because its influence has already been felt in our own relations of life. In America women have monopolized the position of cashiers and typewriters in large offices, as they have also done in the telegraph service, and partly in the postal service. We have already spoken of the Departments in Washington. Of the 415 colleges and universities in the United States, 272 admit young women and men on the same conditions. The oldest and most select in the North Atlantic States, however, are not among them. There are besides 179 colleges for women, mostly in the South, and really only secondary educational institutions, in which 1,648, or three-fourths, of the professors are women. Even in the mixed universities 134 women have regular professorships, mostly in music and the other arts; in 24 they are members of the boards of trustees. At a congress in Chicago, self-conscious women orators defined the coming century as “the woman’s century.”

This shifting of the lines in the positions of the sexes can not but gradually exert a deep influence on all relations of life, and particularly on the whole intellectual life. At first sight, we might think that this would, in consequence, receive a more feminine character; certain it is, that instruction which appeals exclusively to the receptive activity is one of the resultants of this character. But it is the feminine character that seems to be influenced; it imbibes the masculine independence and industry. Woman, by stepping out of the domestic circle to compete with man, seems to increase the unrest, precipitation, and tension in all relations of life.

Furthermore, the question of salary is included in the much-deplored conditions of the profession of teaching. In the official report the salaries of German teachers, as they were three years ago, are justly defined as meager according to the American standard. It appears to us that American salaries according to the American standard are decidedly smaller than German salaries according to the German standard. Superintendents, or school councilors as we say, with salaries of \$4,000 to \$5,000, inspectors or supervisors in the principal cities, as well as directors of the larger high schools, with \$3,000 to \$4,000 are well paid. In large cities the principals of elementary schools receive from \$1,500 to 1,900. Specialists, of whom unusual proficiency in their particular branch is required, are paid better than class teachers. A drawing teacher in Boston receives \$3,000; the instructor of military drill, \$2,000. Otherwise teachers are poorly paid. Massachusetts, three years ago, paid by far the highest salaries; teachers of the elementary schools averaging \$954 a year. Connecticut also paid well, \$660 a year. The official report says: “Such salaries make the permanency of the profession of teachers impossible, a weaver receives just as much.” Large cities like Boston, New York, Chicago, San Francisco, etc., pay high salaries. But how inadequate are they elsewhere. Pennsylvania, on an average, pays \$29 to men and \$30.03 to women teachers a month. For the year 1889 the official report on elementary and high schools together averages the salaries, by the month, at \$42.43 for men and \$34.27 for women teachers.

Moreover, in making a comparison, it must be remembered that the advantage of permanency connected with positions in Germany does not exist in America. There are no pensions and stipends after death (*Reliktenversicherung*). Salaries are wages calculated and paid by the month, consisting of four school weeks; vacation months are not included. Salaries do not continue during interruption of duties by leave of absence or sickness. In Chicago, the amounts deducted are used for paying substitutes.

In the annual reports of the school commission the raising of salaries is repeatedly declared necessary to win more men over to, and keep them in, the profession of teaching. An earnest effort in this respect seems to have been made during the last year (1892) by Massachusetts, which raised the average monthly salary of male teachers from \$118 to \$134, while at the same time it reduced that of female teachers from \$48 to \$46.50; now the law of supply and demand is called into action. The more moderate demands of female teachers are a reason for giving them the preference. According to the present prospect, the excessive number of female teachers promises to increase still more.

*Conclusion.*—In his last report the Commissioner designated the following as subjects requiring legal regulation: Supervision of private and parochial schools; furnishing text-books free of charge to all pupils, and of school books by the State. As these subjects are warmly discussed in teachers' assemblies and journals, and can be decided upon and settled by legislation, the Commissioner's selection may be just. To our German way of thinking they all appear secondary, with the exception of the first mentioned, provided it include a just and peaceable settlement between public and parochial schools. To us the most important and pressing duties would be to bring about a well-arranged organic connection between high schools and universities and, above all, the establishment of a profession of teaching. These points can not be settled simply by legislation, but require long labor.

Intellectual life, religious and scientific interests, are very active along with the restlessness of business life in America. The ambition for higher intellectual culture, emanating from individual impulses, is widely diffused and more active than with us. A peculiar manifestation of this is "university extension," which originated in England, and has made steady progress in America during the last ten years. Its most remarkable fruit is the summer school at Chautauqua, which, with its vacation lectures and courses of exercises, its branch societies and reading circles, directs the scientific education of 25,000 students, or members. Old universities, too, have aided these movements by introducing summer courses. Other associations have also been formed for the same purposes.

Such arrangements still bear the character of immaturity and the amateurs' want of thoroughness, but, at the same time, give evidence of a desire for perfection. The superiority of our scientific work and our system of higher education is readily acknowledged in America; on the other hand, in much that is practical we follow the American precedent, but we do it in our own way; for instance, in our summer normal courses and lectures on political economy for mixed audiences.

The public school system of the United States is a vigorous institution, which during its short existence has grown to its fullest possible extent; but its inner development has not kept pace with its exterior. It resembles a young and numerous army not wanting in warriors and excellent generals, but lacking a requisite number of reliable commissioned and noncommissioned officers and well-trained drillmasters.

III. Dr. Stephan Waetzoldt, principal of Elizabeth School, professor of Romanic languages and literatures in the University of Berlin, and chief commissioner of the German educational exhibit in Chicago, spent nearly eight months in this country, and the result of his observations is embodied in three lectures which he delivered before the Teachers' Association in Berlin in February and March, 1894. These off-hand lectures, given without manuscript, except when the speaker consulted his note-book, and which were reported in shorthand, bear the unmistakable stamp of originality. Perhaps, if the gentleman had reduced his opinions to writing, he would have softened an expression here and there, would have moved certain facts into a better perspective, and have focused others with the intention of enlisting our attention; but as these lectures were intended for German hearers and German teachers, we have here the unchanged, original opinion of a man whose opinion is



considered authoritative in Germany. He makes some errors in his facts and deductions, but they are so obvious that a comment is scarcely needed for American readers. His first lecture was chiefly on the German educational exhibit. It is here inserted on account of its numerous allusions to the other exhibits and to American education.

## THE EDUCATIONAL EXHIBIT IN CHICAGO AND THE SCHOOL SYSTEM OF THE UNITED STATES.

[Three lectures.]

By Prof. STEPHAN WAETZOLDT,

Director of Elizabeth School and professor in the University of Berlin.

### FIRST LECTURE.

LADIES AND GENTLEMEN: In whatever way we may judge the Americans, one thing we must concede to them: They devise lofty plans and display unexampled energy in their development and execution. When the American mind conceived the thought of a World's Fair in the broadest sense of the term, the plan laid out was, not only to undertake a universal exposition of material things, but to draw all forms of culture, the intellectual as well, into this emulous contest. The high estimation in which education is held in the United States; the deep and broad interest manifested in all questions of instruction; the firm conviction that education is the most powerful weapon of the progress of mankind, left no doubt that an educational exhibition in the widest acceptance of the term would be planned. In fact, the first outlines sent to us displayed gigantic dimensions. All civilized nations of the earth were expected to exert themselves to unite in Chicago whatever they possessed in the field of education, from the university down to schools for idiots and deaf mutes; and it was thought possible to judge which nation would be victorious in the contest.

The plan was this: Every nation was to show the sites and different types of school buildings on as large a chart as possible; explain the administration and organization of its school system by inscriptions, tables, and graphic representations, and also show the means of instruction peculiar to it. From the very beginning particular stress was laid upon exhibiting the work of pupils and students. This might then be compared, indeed it was contemplated to institute an international comparison which would determine what country had made the greatest progress in late years. The execution of this gigantic plan fell behind the idea as first conceived and formulated, for at Chicago there were represented, beside all the States of the Union, only Germany, England (but only London, and of London only the pauper schools), France, Russia, Japan, the South American States, Mexico, and Spain, although the educational exhibit of Spain might have found room on this desk. Unfortunately Italy, the home of universities, was not represented; nor were Austria, Sweden,<sup>1</sup> Norway, and Denmark, where public education is remarkably progressive. At least these latter countries sent very meager exhibits. Without exaggeration and self-adulation we can say that the palm of victory belongs to Germany. There has not been expressed the slightest doubt as to that.

The German exhibits were arranged in the upper gallery of the immense Manufactures and Liberal Arts Building, a gallery of such dimensions that the length of this spacious hall is not equal by far to its breadth. The space occupied by the German school exhibit comprised 2,200 square meters, twice the space of the Philharmonic Institute. Such was one of the exhibitions. Adjoining were the exhibits of England and the United States; opposite to that of Germany was the French exhibit. Moreover, a great part of the educational exhibit was placed in other buildings. The tendency to particularism and independence prevented the separate

<sup>1</sup>Sweden presented technical training, sloyd and physical training as its special features.—(Ed.)



South American States from joining the general school exhibit, hence their best efforts toward culture could not be seen except in their own respective State buildings.<sup>1</sup> The French exhibit suffered from lack of concentration; it was distributed in three buildings: the Manufactures and Liberal Arts Building, the State Pavilion of France, and the Palace of Agriculture. The last mentioned contained the exhibit of the French schools of agriculture.

Over the entrance to our German exhibit stood the words "German educational exhibit," though in reality it was an exhibition of education in Prussia. A patriotic and a political reason can be given for this inaccuracy. In foreign countries the names of the separate German States sink into oblivion, and the farther away from Germany you go, the more does this apply. Germany, the Empire, alone is known. It was difficult for Americans to understand that our schools are not under one government, that we do not even have general school statistics, and that all our educational systems are affairs of the separate States. Foreigners look upon and comprehend Germany as a whole. Prussia, as was her duty, took the lead for Germany, and also bore all the expenses. It is true that we have an imperial postmaster in Germany, but unfortunately no imperial schoolmaster. Würtemberg, alone, of the other German States, sent a separate exhibit, not comprehensive, it is true, but excellent on the whole and in part, and kept separately within the large exhibit. Bavaria was represented in the university exhibit, and partly among the showing of school systems by a chart and a few photographs of buildings. Saxony, unfortunately, was not represented at all, the Hanseatic cities very meagerly, the Grand Duchy of Hesse by a few books.

The resolution to undertake an educational exhibition on a large scale was framed very late with us, but once taken was executed with vigor. The Emperor's influence was secured to obtain an appropriation sufficient for carrying out the purpose well. As is the fate of all State appropriations the limit set has been overstepped. We are indebted to the minister of education for resolving, despite many a doubt, upon a comprehensive educational exhibition. In December, 1892, the work was begun by the three judges, Schneider, Stauder, and Althoff. Schmidt, a younger Government counselor, undertook the general report. As all was to be finished in March, the amount of preparatory work required feverish energy. First of all, plans had to be devised for the great undertaking, material accumulated and sifted, collections made, freight and security considered, etc. The most difficult question, however, was: What shall we exhibit? That which is best of all, the instruction itself; the inspiring word of the teacher, his very life in the class room, transmitted from eye to eye and mind to mind, we could not reproduce. In their enthusiasm the Americans had at first intended to present whole classes in process of being taught, and thus institute competitive instruction, but through the just and discriminating prudence of the committee of education, and particularly of the president of the advisory council for the American educational exhibit, Dr. Wm. T. Harris, this plan was not carried out.

We decided that were we to be represented at all we should have to include all departments of education, from the university down to the lowest country school, also institutions for the blind, deaf-mutes, and idiots. One department alone was excluded, that of technological instruction, and also gymnastics. Let me remark here that universities and the university exhibits lie outside the scope of my address to-day. I shall confine myself to schools in the narrower sense of the term. And why were the technical schools not represented? The first consideration was that America, the land of technics and technical progress, could easily surpass us; moreover, there was not money enough for everything; and finally, the department of technical education is, with us, unfortunately divided. The management of industrial and technical schools, as well as technical continuation schools, belongs to the department of the interior, not to that of education.

<sup>1</sup> This is an error, as Brazil, Argentine Republic, and Uruguay were well represented from the educational side, and not in their State buildings.—ED.

As was manifested later, the missing exhibit of technical and industrial schools was a deplorable deficiency. However, the demands for space, which provoked the most heated discussions, were such that we would not have received the space necessary to represent the technical and industrial schools. How splendid this display would have been was shown in an address delivered at the World's Congress of Engineers, August 5, by the American chairman, Mr. Remy, who said that technological instruction in all its grades is better in Germany than in America, because it is commenced later with more mature students, and is pursued for a longer period of time; consequently, it is more profound, more thorough, and much more advanced. What a German slowly accomplishes in a year, the American student is expected to rush through in four weeks. But, as he said, circumstances in America hardly permit it to be otherwise.

After the resolution had been passed to undertake a German educational exhibit, the work of preparation began. Countless letters and requests had to be addressed to publishers. What seemed worth sending had to be arranged according to definite points of view, and, above all, statistical material had to be collected on a large scale. The most important work in this line was done by Dr. Petersilie, of the bureau of statistics. Furthermore, comprehensive papers on the condition and history of public schools, secondary education, and universities, schools for girls, etc., had to be prepared in a few months. Thus, in an incredibly short time were produced: (1) The great and comprehensive memorial on the Prussian school system (1892), embracing all elementary and middle schools, by Messrs. Schneider and Petersilie; (2) the excellent history of secondary education in Germany during the nineteenth century, with numerous statistical additions by Dr. Rethwisch; (3) the admirable work of Miss Helene Lange on the development of institutions for girls; (4) to these were added graphic representations of the attendance of high and elementary schools, the number of graduates, etc. For wall ornamentation, a large number of photographs showing the inner and outer construction of well-known schools, were provided, as well as busts of great professors and teachers. The four renowned and great friezes, "The four epochs of science," by Knille, were taken from among the treasures of the National Gallery and formed the finest ornament of the German educational exhibit. The first two, the Grecian epoch (philosophers next to a group of wrestling youths) and the epoch of Weimar (Goethe and Schiller), were placed in the division of school instruction, the two others in the university division. Besides these, there were two paintings, ideal representations of secondary and elementary schools, designed by a young painter from Berlin, Mr. Koberstein. They were pictures of a very large size.

The place here in Berlin set apart for the collections was quickly filled; in a short time there was hardly any room in the halls and the yard. This chaos was cleared only by degrees. Almost 800 boxes, whose dimensions averaged 2 cubic meters, were sent in installments on two steamers to Baltimore. I shall skip the weeks and months during which this chaos changed to order, a period in which from Russia, Austria, and America space had to be conquered; the galleries were still building, and the architectural decorations were being made. Finally, after a thousand difficulties had been overcome, the work was completed.

Let me invite you to a walk through this educational exhibit. Leaving the Canadian exhibit we enter from the south side through a portal of simple Greek proportions that bears the inscription: "German educational exhibit." Before us, along the main balustrade, extends the university exhibit; to the left is that of the schools; on the upper floor and covering the same space, is a gallery devoted to special school and library displays. Looking up into an expanse of immense breadth and height filled with a mist of dust which a moving mass of people always raises, we see the gigantic framework of the Manufactures Building, with its yellowish-white windowpanes. Approaching the banister we look down upon the bustling crowd of a city within this building; a city with belfries, turrets, and minarets, in whose



separate quarters all the nations were united. Exhibits of industry and manufacture were on the ground floor, those of science and the liberal arts in the galleries.

In our own domain, first an open space was provided for a kind of court of honor, so to speak, both for higher and lower education. The first place was occupied by the exhibit of education of the blind, a display for which we must thank the Imperial Blind Asylum at Steglitz, and which proved to be one of the most attractive points of the German exhibit. It was particularly so, because of the following three features: (1) The large library in Braillean script, a library that can not be duplicated, for nowhere in the world is there even a similar collection of books. It comprises 730 volumes, written for the blind in God's name by matrons and young ladies of the society of "Edelweiss," so that the treasures of German literature may be accessible to them. Whereas before the blind had only the Bible, some school text-books, and a few journals, they now read the best our literature affords: Goethe, Schiller, Uhland, Gerok, Scheffel, Freytag, etc.; (2) the ingeniously devised methods of instruction for the blind in natural history, physics, geography, arithmetic, etc.; (3) the models made by the blind themselves after touching tangible objects, thus giving us a representation of the world and its objects imagined by the blind.

Adjoining this (in the court of honor) were the exhibits of the city of Berlin, portfolios containing pictures of the most beautiful school buildings, and a row of show cases filled with the handiwork of girls from the One hundred and forty-third public school. I was asked countless times whether this was the work of special schools, and my information that these pieces of work were made in one of the many public schools of Berlin was always received with astonishment. The official graphic representation, which shows that the incomparable growth of the city and the gradual increase in schools and educational facilities have gone hand in hand, that buildings especially erected for school purposes were always ready when the city limits were extended in any direction, awakened the greatest wonder among the people at Chicago. This table showed that provision for public schools was proportionate to the vast growth of our city from 1861 till 1892. Chicago offers no comparison to these statistics—60,000 children there are not going to school for want of school facilities and teachers. "You have given us a lesson in humility," said a prominent American to me.

Farther on we come to the library containing the forms of constitution and administration of schools; the organizations found in the separate German States were here represented, when possible, in every detail. Close by, on a table, was placed a collection of German educational journals, arranged by Mr. Arndt, a normal school teacher. Hundreds of copies of the special catalogue prepared for this collection were given away. None of us who had contributed our share of work to this department had known that Germany publishes regularly 239 pedagogical journals and 30 teachers' almanacs, not including journals for juvenile literature; these were enumerated in the supplement of Arndt's catalogue. All the last year's numbers of these journals had been collected and exhibited in a series of beautifully bound volumes. The comparatively few journals of other countries, contrasted with the almost appalling number of our country, representing all, even the smallest school systems, was a truly proud evidence of the inner work of German educational science and method.

The vestibule which adjoined the court of honor was crowned by me with the first painting of Mr. Koberstein, a large semicircle on the left side of which boys in the Frederick-William Gymnasium were represented wrestling and throwing javelins. On the right-hand side, separated by an oak that bore the portrait of William von Humboldt, a group of boys were gathered around a teacher giving explanations with the aid of the microscope. Before this picture were 10 leather-bound folios containing the latest and most beautiful plans of school architecture. The volume on the history of public school buildings of Prussia from 1821 till 1880 began with the small designs of the modest country schoolhouses in 1821 and concluded with the magnifi-



cent public schools now erected by the State and our large cities. The selected models of normal schools, preparatory institutions, classical and modern high schools, etc., were exact in every detail; for instance, the arrangement of secondary schools was shown in models of the Frederick-William Gymnasium and the Augusta School. Then the secondary school system was graphically described, and 13 large statistical charts showed the progress of education in Prussia during the last twenty years in a few striking statements, puzzling even to us who, though in the midst of the educational activity, had never beheld such an array of comparative figures.

I shall mention only a few of them. They were afterwards divided into two parts, taking the dates 1871 and 1892; thus the beginning of the late development of Germany and Prussia and the present time were placed side by side to facilitate comparison. The normal school students in Prussia numbered 5,000 in 1871 and 10,800 in 1892. In 1871 the expenditure for normal schools amounted to 1,600,000 marks; in 1892 to nearly 5,000,000. The State's contribution in 1871 was 1,039,000 marks; in 1892 it was 3,360,000 marks. In the year 1871 Prussia had 1 normal student to every 4,930 inhabitants; in 1892 the proportion was 1 to 2,764. The proportion of normal students to the number of teachers was 1 to 10.4 in 1871; in 1892 it was 1 to 6.6. The annual cost of the education of a normal school student was 321 marks in 1871, and 456 marks in 1892.

But what we have reason to be most proud of was the chart showing that in the matter of obligatory attendance at school we surpass all other nations on the face of the earth. Prussia, in the year 1871, numbered 4,464,906 children who were subject to the compulsory attendance law; in 1892 the number was 5,401,566. Of these 91.02 per cent, or nearly 5,000,000, were instructed in the public elementary or people's schools. The 400,000 over and above the 5,000,000, comprising the attendance in advanced elementary schools, can hardly be compared numerically with the attendance in the public schools. In Prussia, 20,783 of the 4,464,906 children in 1871 (and the number has always been small) were unjustly withheld from school—that is to say, were not enrolled in any school. In the year 1892 only 945 of the 5,401,566 children then subject to the law were unjustly withheld from school. We should try to understand the meaning of the success of a country in enforcing obligatory attendance at school so thoroughly that none but the children of the transitory or floating population (sailors, dwellers in canal boats, ropedancers, etc.), can slip through the meshes of the legal net. No other country in the world can show similar statistics. Not even among the numbers of which France, our closest rival, is proud, did I find anything like it. When a commissioner from Russia saw these numbers, he said: "I do not want to see any more; I am ashamed," and went away.

Permit me to quote a few other items. In 1871 we had 52,746 classes, or class rooms in the people's schools, and in 1892 exactly 30,000 more, 82,746. The number of pupils, as mentioned before, had increased by 1,000,000 during the same twenty-one years. The number of teachers during this period increased by about 19,000, or about 1,000 every year.

Let us now consider the question of expenditure. We read in American newspapers that Germany has no money for its schools, and that it is being slowly eaten up by expenditures for its armed defense. The following numbers prove that there has been money for the schools, though not always sufficient. The expenses of public schools in 1871, in Prussia alone, amounted to 55,648,000 marks; twenty years later they amounted to 146,225,000 marks. In 1871 the State defrayed 2,895,000 marks of the sum total for elementary instruction; in 1891, 46,495,000 marks. In 1871 the tuition fees amounted to 10,490,000 marks; in 1891, only 1,398,000 marks. These figures show that our elementary schools are fast becoming gratuitous schools. In 1871, a people's or elementary school cost 1,976 marks; in 1891 it cost 4,029 marks. In 1871 every 1,000 inhabitants paid 2,262 marks school expenses; in 1891 they paid 4,881 marks, which is 4.80 marks annually to every inhabitant.

In conclusion I mention the charts, which showed the education of our army recruits. In Prussia in 1867-68 as many as 3.72 per cent of the recruits were without school education; in 1891-92 only 0.69 per cent. Even Posen, the poorest province in this respect, reduced its 14.78 per cent of 1867-68 to 2.38 per cent. These are figures of which we may justly be proud. We find similar elating facts with regard to secondary education. Allow me to touch upon a few only. The entire expenditures of Prussia for high schools (classical and modern) in 1871 amounted to 7,534,000 marks; in 1891, to 30,918,000. In 1871 the salaries of the teachers of these schools amounted to 5,500,000; in 1892, to 25,733,000 marks.

Not so favorable a light was thrown on the development of our schools by other numbers, particularly those that showed what positions in life are held by the pupils of secondary educational institutions. Really surprising, at first sight, was the disproportion in the attendance of the upper and lower grades of the various kinds of secondary educational institutions. Exactly 18 per cent of all the pupils attended the upper grades of the "Gymnasia;" 37 per cent and a fraction the middle grades, and 44 per cent and a fraction the lower grades. That is approximately the normal status. In the "Realgymnasia" only 7.62 per cent of all the pupils reached the upper grades (i. e., "Prima" and "Secunda"); 39 per cent the middle, and 53 per cent and a fraction attended the lower grades. In "Realschulen," of the first and second order, the proportions were 1.18 (or 235 pupils), 33 per cent and a fraction (or 6,615), and 65 per cent (or 13,043). I know very well that in interpreting these numbers we must consider the peculiar German institution—the right of a one-year military service, which is acquired by attending only seven of the nine years' course of secondary education. This is the chief motive of many in attending secondary schools who would otherwise not enter them.

Another question is, what vocations do the graduates of the "Gymnasia" (of 9 grades), "Realgymnasia," and "Realschulen" choose? Of those who received diplomas between the years 1868 and 1891, only 71,226 had completed the course of gymnasia, but 120,000 that of "Realschulen." Of the first-mentioned number, 52,000, or 74 per cent, devoted themselves to the higher professions and entered the universities, 5 per cent to technological, and 20 per cent to other pursuits (those of merchants, civil service, etc.), fractions of a per cent not being considered. It is astonishing to notice that of the graduates of "Realgymnasia" 30 per cent aim at the higher professions, 20 per cent at technological, and 50 per cent at other pursuits. From this it becomes obvious that the institutions for technological education labor under the difficulty of being obliged to admit students without a thorough secondary education. In comparison with other States our showing is not very good, and proves the necessity of reform.

Leaving these tables of statistics and turning toward the large aisle of the German educational exhibit, we find a large number of models of buildings, rooms, baths (from Göttingen), and separate halls, and an immense number of apparatus and devices for teaching. Here we could see how rich and inventive Germany is in physical, chemical, geographical, botanical, and zoological representations, and why it supplies the whole world. The space on the left side of this aisle was taken up by girls' schools, elementary schools, and institutions for deaf-mutes and idiots. On the upper gallery, to the left, were the exhibit of normal and their preparatory schools and manual training schools. On the right of the aisle referred to the exhibit of the secondary schools was divided according to disciplinary studies: mathematics, physics, descriptive natural history, modern and ancient languages, etc. In every one of the single groups and divisions a definite idea had been carried out.

The historical development of this kind of schools was shown in old publications, programmes, courses of study, comparative statistics, and pictorial representations; then attention was drawn to their present status by means of the same objects in their latest forms. The study of history, for example, was illustrated by a series of libraries with special catalogues, collected and arranged for this purpose. The text-



books and books of reference of the Prussian normal schools alone numbered 270 volumes; the library of the normal school at Oranienburg, 580; the library for the pupils of a high school for girls, 420; a scholars' library, 30; a city school library in Berlin, 256; the library of hygiene and physical culture, 123, and the one exclusively made up of books on methods of teaching, over 300 volumes. Professor Fechner had collected 225 school readers, including nearly all the editions from 1771 to 1893. The catalogue of this unique collection contained in itself the history of the German public school reader.

The apparatus for natural philosophy of a Berlin city school filled 5 show cases, each measuring a cubic meter. When we told Americans or other foreigners that each of the city schools (200 of them) of Berlin had that many pieces of apparatus for instruction in natural science, and that these schools are not high schools, gymnasia, or schools of technology, but simple elementary schools, they were very much astonished. Perhaps we do too much in furnishing apparatus. The Americans lay great stress upon having only a few simple pieces of apparatus which, if possible, the teacher and pupils construct themselves. I am convinced that it is to the pupil's advantage to learn the principles by means of his own handiwork. The attempt was also made to show the development of instruction in geography by means of the oldest, later, and latest school books and appliances; thus, for instance, a gymnasium in Danzig exhibited the map of Prussia which it used in 1700, side by side with the one it makes use of to-day. The gymnasium in Görlitz sent the terrestrial globe used in 1680, and one procured in 1880. Atlases used in our schools during the seventeenth century, the microscope used in the eighteenth, and like instruments used in our century, were among the exhibits.

On the walls and partitions, a mural surface of about 500 square meters, there were placed abundant illustrations of school buildings, selected charts, and maps, the best specimens of object-lesson charts, the fresco and other ornamentation of our school assembly halls, all in separate specimens. Whoever examined this abundance knows that most of what was sent remained partially hidden in closets, map cases and portfolios.

Finally, we come to the selected work of pupils and graduates that was criticised and ridiculed so much on our side of the ocean. In Germany, the fact of our sending whole stacks of chests filled with copy and exercise books elicited many satirical comments. The *Zukunft* even published a humorous article on the subject, but experience proved that no other exhibit was so closely studied and investigated as the written work of our pupils. The reason for this is easily understood. The work of the pupils and graduates of normal schools, gymnasia, "Realschulen," etc., probably 18,000 books, seemed lost in the immense extent of the exhibit. In judging a school, the most important factor is always the achievements of its pupils; and there was no other way for us to show the ability of the pupils except by written work. The exercise books were put into plain, dark cardboard cases and distributed among the tables over the entire space allotted to us. It was a matter of principle with us to exhibit no exemplary work at Chicago, made for the occasion, but simply the everyday work of schools during 1892, or at the beginning of 1893; that is, notebooks as they came from the pupils' hands during class work. The worst specimens, of course, were not selected, but from a number of typical institutions about 20 books of every kind were chosen in such a way that from each class of these institutions a number of good, medium, and poor exercise books were exhibited, thus giving an accurate idea of what is accomplished in these schools.

It took the awarding judges a long time to understand that we had exhibited no prize work, and that we had included bad work to show the true state of things. They looked upon the bad as prize work and wondered at the many mistakes. All other nations<sup>1</sup> had exhibited prize work. American journals, educational and others

<sup>1</sup> M. Jules Steeg, of the Musée Pédagogique in Paris, is authority for the statement that France presented the average work in schools.



interested in the German exhibit, declared upon the evidence of these exercises, that they had had no suspicion of what a German teacher accomplishes in the way of interlinear correction. To correct the compositions of forty to fifty pupils in a German school gives the teacher many hours of work outside of the class work. The red ink marks and notes in the thousands of copybooks were a monument of honor to German pedagogues, and honor and recognition were generously bestowed upon them.

How else could a foreigner have seen the actual work of our pupils? Even should he visit our schools with recommendations and letters of introduction from the minister of education, what rector would allow him to inspect the exercise books of all the classes? Such a thing would hardly happen. Hence foreign teachers and professors truly said that they could buy our printed text-books and manufactured devices for instruction any day by ordering them through the ordinary channels of trade; that they could copy our catalogues, syllabi, and programmes, but that this was their only opportunity of seeing the real work of our schools. Russians, Swedes, Norwegians, and Americans labored for weeks and months at this exhibit. The work of graduates was of special importance. What had been accomplished before leaving the normal school showed absolutely what we require of our public school-teacher before he enters upon the practice of teaching. And then compare with it the accomplishments of the average American teacher who has passed an examination for primary education. From the work of graduates of secondary schools the visitors saw what we demand in the nature of intellectual work from our young men before they enter universities. The whole of the first two years' work in an American university is included in the last two years of the gymnasium in Germany. With few exceptions, the graduates' work of American colleges alone can be placed on a level with that of our gymnasial graduates. That was the opinion expressed by all who understood the difference existing, and they were not all Americans.

Now, what has been the fate of these scholars' efforts? There was much talk about it in Germany, and it was finally decided that this work of pupils would be thrown into Lake Michigan or be used as wrapping or packing paper. Most of the other exhibits came back from America; those were not wanted. But while we supposed that the pupils' work would not be wanted by the Americans, it is a fact that students of education and several universities contended for them and paid cash for them. Most of the exercise books are to be preserved in the large museum of education in Philadelphia. This city subscribed \$300,000, or 1,200,000 marks, for the erection of a museum of education exclusively. The German exhibits that have gone to Philadelphia form the foundation of a foreign section there; so then the mistakes of our girls and boys in quarta (fourth grade in a gymnasium) will be preserved in Philadelphia as a perpetual remembrance. Another portion of the pupils' work will be kept in the library of the University of New York; another in Michigan, and the rest in California. The Americans realized that they would not be able again to obtain such material for examination and comparison. In collecting as much of pupils' work as possible from all the exhibits from the French, Japanese, etc., they accumulated highly interesting material for comparison.

It is also important to know that in America the chair of pedagogics in universities is filled by pedagogues and not by philosophers; that the professor teaches, and also practices pedagogy. In so far as pupils' actual work compares, not only in theories but in facts, there are perhaps no better subjects for comparative study than the exercise books of American, English, Swedish, and German pupils.

What opinion was pronounced on the German educational exhibit? As far as I know, all that we accomplished was appreciated, and at times overestimated. Knowing the weak points of our own educational systems and the distance we must measure before attaining conditions with which we can be satisfied, we were sometimes rather embarrassed by the praise lavished upon our achievements.

Every one of the great civilized countries sent a delegation of educators to Chicago. France sent six delegates, among them the brother of the renowned director of French primary schools, M. Buisson; the rector of Poitiers, M. Compayré, and also a woman. Russia delegated Prince Wolkonski; the University of St. Petersburg sent Professor Dimscha and Mme. von Schemstkin; Denmark sent a lady from Copenhagen, who gave us enough to do. She was the awarding judge for German normal schools and their preparatory institutions, and I must confess that she had very profound knowledge of professional preparation for teachers. I carried on many a heated discussion with her to convince her, not always convinced myself, of the excellence of our organizations. Sweden and Norway had sent quite a number of noted educators, among them the director of the pedagogical seminary in Stockholm. Representatives from the United States were numerous. Besides official delegates, there were hundreds of teachers who individually visited the exhibition.

Their first question invariably was: "Where is your kindergarten?" The German educational exhibit included no kindergartens by reason of their forming no part of the governmentalsystem. Kindergarten education was represented elsewhere; partly in the Children's Building. The second question was: "Where is your public (meaning people's) school work?" We had exhibited no written work of the elementary schools of Prussia, but had selected and arranged a large collection from Würtemberg. This collection showed that the people's schools in that country have attained a high degree of efficiency. Another question was: "What method do you adopt?" or, "What is your system?" We often met with the opinion that a single system predominates in Germany; that a book, so to speak, a prescriptive regulation (like the English education code) applies to the whole Empire. If one inquired concerning our method and was directed to the library containing the methods of teaching in elementary schools in a long row of volumes, or perhaps only the methods adapted for teaching a single branch, say, arithmetic, he turned away in dismay. The question: "How do you teach reading, music or physics or singing, etc.?" was asked every minute. One day a young lady representing a large newspaper came to me, sat down, and, taking out her notebook, said with American determination: "Now, my dear Professor, what are your views on education?" She expected my pedagogical creed in a nutshell.

Thus we were brought face to face with the peculiarity of American education and how it is understood in that country. Only the best schools of the most progressive States have an idea of the manifold liberty that permeates all our uniformity and directive agencies, the liberty of the individual teacher in momentary formation and treatment of their subjects. We had on exhibition a collection of all the text-books used by the pupils of 40 schools, including rural schools of the western, middle, and eastern sections of Germany, and those of large, medium-sized, and small cities. When asked to show the books of our elementary schools, everyone was astonished when we pointed to the Bible, a book of biblical history, an arithmetic, a copy book for penmanship, and a reader used in a city school of Berlin. At first it was hard for Americans to understand that with us the teacher himself replaces the text-book on physics, zoology, botany, etc.

Americans and Germans do not agree on this point. Our tendency is to instruct orally as much as possible, and to make use of a book only when it is necessary for reference. The Americans teach by means of a text-book, not because of the inability of the teacher, but from pedagogical principles. Their idea is that in acquiring knowledge the pupil should not feel continually dependent upon the teacher, but should himself do as much work as possible. Their books are very cleverly divided into a number of lessons. Questions relative to the subject of the lesson are given to the pupils in brief form to awaken thought. The teacher assigns a lesson that has not been reviewed, and the pupil, like the gold digger, studies by "digging out the lesson." American teachers are of the opinion that our method keeps the pupil constantly dependent and gives him too little chance for self-activ-



ity. Their purpose is to let him do as much work as he can by himself. The teacher must only supplement, help, steer, or direct, and in so doing interfere as little as possible with the independence of his pupil. That is, in rough outline, the American principle, according to which there is, in most cases, nothing of what we call vivid oral instruction and the unfolding of the subject-matter in class. An American teacher rarely enjoys that supreme pleasure of reading in the eyes of his class that they are following him, nor has he the pleasurable consciousness of developing a subject himself as the exigencies of the moment demand.

This is a consequence of the low average of the professional education of American teachers, which to me, on the whole, seemed particularly low. Perhaps our method is at fault in a measure. It seems to me that we clear away too many difficulties for the pupil; we make study too easy for him, are too anxious to spare him work by which he himself could discover what we elucidate. Undoubtedly the American pupil is more independent of his teacher than the German. That independence is a consequence of the general attitude of the pupil toward the teacher, which is influenced by the general position of youth in the nation.

The Americans believe, and I think they are right, that their drawing and modeling are superior to ours. In good American schools instruction in both is given from the very first. Practice of the hand and eye is cultivated from the first day of school. It seems to me that American drawing is lighter, freer, and easier than ours. A second superiority in American schools which I noticed is the pupils' command of their mother tongue, written as well as spoken. It surprised every one of us to observe with what confidence and facility the pupils wrote their mother tongue. For instance, we entered a class of the second school year; the teacher said: "Here is a gentleman from Berlin. Berlin is in Germany. He wishes to see our school. Now, write what you see." The children took a sheet of paper and wrote the following: "A gentleman comes into our school. This gentleman is from Berlin. He looks kind. He speaks with the teacher. He can speak English." The children expressed themselves in short, forcible sentences.

An off-hand composition on the fish by a class of the second year also was as follows: "I have seen a fish. I saw the gills of the fish too; they are red. Our teacher says fish breathe through the gills. My father always eats baked fish." That is how Americans teach; they allow children to write on quietly, and correct only the worst mistakes. American pupils do not use exercise books, but simply plain sheets of paper. They write only very short compositions on what they know, see, or have personally experienced. On the other hand, we insist entirely too much upon imitation of literary examples, make our pupils write too much according to models, and we criticise their language too closely. The liberty which allows a child its naiveté of expression, the artlessness of its views, and the simplicity of its language, we do not always find with us. In regard to that we can learn something from the Americans.

Not to try your patience too long I shall mention but one other fact. Our compulsory attendance at school, the length of sessions, the large number of school days in a year, the large average attendance, the universality of popular education, the extent and thoroughness of our normal school course, the excellence and abundance of our devices for object teaching and the accurate and tasteful execution of our apparatus, awakened the greatest admiration. Americans acknowledged our superiority over them in these matters. The liberty that does not allow the individual teacher's own work to suffer under restrictive regulations is entirely unknown to them. The German system of instruction was much commented upon by Americans of high standing and others. A Frenchman, a member of the Institute, said that our educational exhibit was the best manifestation of Germany's power, and we often heard that the seriousness of the German character was clearly revealed in this division of the great Exposition. A Chicago student spent a long time in this department to prepare for his doctorate a dissertation on the leading thoughts in the German educational exhibit.



Now, what is going to become of all this material? The text and exercise books left in America we can easily replace, but shall what remains be scattered to the winds? It will be a difficult task to form so complete a collection again, for seldom is so ardent a zeal aroused as that which everyone displayed who contributed in any way to this work. Could we not succeed in keeping it together if only as a provisionary foundation for a German museum of education to be established on a more elaborate scale to serve educational purposes? All our large libraries might contribute their superfluous schoolbooks.

If we could collect the literature of every branch of study in systematic retrogradation until we had compiled a history of these branches, we would know exactly the development of a subject from the most illiterate to the present time. Just now no one knows anything of the history of such subjects. If we could retrace our steps in the past by means of school programmes, organizatory orders, and other school publications, we would attain an excellent object: The history of German schools from sources at present unknown. What we now call history of education is not a history of facts, but of systems and theories. If we were to investigate how much of the theories of Salzmann and Pestalozzi and others had entered the schools as late as 1830, we would find that outside of books their views influenced the people and the methods of teaching much less than we care to acknowledge.

Were we to collect all educational appliances upon this stock collection, it might become a place of reference for the information of school authorities, directors, and teachers as well as for specialists. It might likewise be a receptacle for the school statistics of Germany and for the history of the schools in all the German-speaking nations at present not in existence. We should then have an educational watch tower from which to observe what schools of other nations accomplish. I believe we do not look beyond our own confines often enough to have other than biased views of the great success our school system has met with. It would be well for us if we had the place and the number of men there are in the United States whose life's work is to introduce into the schools of their country whatever they find good and excellent on the other side of the ocean in the methods of the great, civilized nations of the Old World. Such an institution could effect much general good; whether it will ever exist is still doubtful.

Permit me to draw your attention once more to the characteristic features of the American educational exhibit. What is most important for us to notice is that the exhibit was not arranged according to a uniform plan; the work of whole schools and that of individuals were placed next to each other heterogenously. The whole exhibit seemed to lack system. Strictly systematic arrangement was a feature of our exhibit made possible only, because affairs having been conducted by comparatively few persons perfectly familiar with the leading thoughts, everything was directed from a common center. In the American exhibit excellence was found side by side with puerile endeavors; some instances, indeed, are almost incredible. Among pupils' work, a small number of the Catholic schools of one State had exhibited a portrait of Pope Leo made of their bishops' hair. That was also pupils' work, but there was much that was excellent in this very odd collection.

It was interesting to see how young States like the Dakotas, having been States only a few years, became studded with universities, seminaries, public schools, and high schools. In South Dakota, which was a Territory four years ago, the university had already burned down once. Iowa, Nebraska, and a number of other young States presented classes by means of photographs and the phonograph. As large a photograph as possible was taken of a class during the hour of recitation, and the recitation itself was taken down word for word in shorthand, and these notes transcribed on a typewriter and bound; sometimes a whole lesson was spoken into the phonograph. So, then, seated in an easy chair, with the ends of the tubes of the Edison phonograph held to our ears and the large photograph of the class before us, we heard the teachers instruct and the pupils answer. Thus we were enabled to pass

judgment on a model lesson in history or grammar, and could convince ourselves of its correctness by the engrossed stenogram submitted. Among my collections, still on the ocean, I have a number of such phonograms and photographs which were presented to me. Perhaps I shall be able to give you the opportunity of listening to such a history lesson recited in South Dakota.

In all American schools and exhibits, as said before, much stress was laid upon what Americans call individual work, i. e., not only the achievements of a class, but also that which a single pupil accomplishes by choice under direction of his teacher. Their principle of not depriving the pupil of his independence influences also their estimation of personal accomplishments peculiar to them, i. e., drawing and modeling. Very odd things were produced in this individual work. A girl in a Utah school had prepared a folio volume containing the entire history of literature of all civilized countries arranged in parallel columns; this was considered a particularly great piece of work. Further on we saw large volumes of written lectures on psychology and pedagogy. To us this overestimation of paper work, the printed or written as against what we call the living word, seems very strange.

## THE SCHOOL SYSTEM OF THE UNITED STATES.

By Prof. STEPHAN WAETZOLDT, of Berlin.

### SECOND LECTURE.

LADIES AND GENTLEMEN: In my first lecture I had the pleasure of showing you how the German educational exhibit developed, what impression it made on the different nations, particularly on American teachers, and how, judging our achievements from the American standpoint, it brought to light certain fundamental differences between our pedagogic conceptions and those of the Americans. To-day permit me to acquaint you with the government and policy of public education in the United States. In order to understand under what conditions schools, or the educational life of a nation may thrive, we must glance at its historical, economic, and social position, and at the conditions of its political existence; for the educational institutions of a nation are strongly influenced by its history, its activity, and their effects. We must consider what the talent of the nation is, the bent of the education it requires to fulfill the duties of citizenship, and the end it purposes to attain through its education.

Being descendants of the most gifted nations of Europe, Americans, on an average, are presumably not less gifted than their ancestors of the Old World. The country has developed from colonies; only the adventurous emigrate, those who have ideas of their own and the strong will to carry their ideas into effect; in short, active, aspiring people, while the sluggish and inert stay at home. Hence this involuntary selection explains the very natural increase in talent and capacity. Experience teaches that a great increase in national ability takes place in consequence of an intermingling of representatives of highly civilized nations. On the whole, the union of Germanic-Anglo-Saxon and Romano-Celtic blood has not been attended by unfavorable results. The conditions of life and nature are similar to those of European nations. The energy of North Americans has had a broad and fertile field for display from the beginning; their intelligence has been stimulated by struggles with nature and circumstances, so that the physical and mental constitution of the American, though similar to that of Europeans, has become more refined and much more active.

Americans consider themselves more intelligent than all other nations. An American never thinks slightly of himself; he believes himself to be the man of the future, conscious that nothing within the limits of human power and ingenuity is impossible for him. His achievements prove that he thinks and acts very quickly, that he is gifted with a lively imagination, and that, perhaps, in his youth his



moral emotions exercise little restrictive power; though this is rather a doubtful assertion. If we contemplate the immigrant in the United States in the second or third generation, we find that he comprehends quickly, learns eagerly, is not narrowed down in the exercise of his will power, and is altogether practical. American schools aim directly at being practical from the lowest primary school to the final university course.

The Americans are superior to all other nations in the precocity of the young, which shows itself in physical development, as well as in that of character. While the twenty-fifth year is accepted as the beginning of the productive age in our States, it is from five to eight years earlier among the middle classes in America. This more rapid development is partly due to the fact that Americans enter into business life earlier; their boys become independent very soon. This is a pecuniary gain for the nation, since parents are rid of their children earlier, and a proportionally larger number of persons are simultaneously self-supporting. Inasmuch as everyone yields to youth in America, the American boy is or is considered, the representative of the future; he is everywhere looked upon as the bearer of new ideas; whoever does not care to grow old associates with youth and the youngest. Even in the family the child is independent at an early age. Parental authority and strict home training are seldom met with. Girls and boys are educated alike in and out of school. In order to understand the peculiarity of life at school, we must consider that the two sexes associate unreservedly with each other.

It is a principle with Americans to allow a free development as early as possible. Erudition, if not turned to practical account, is not much thought of. The aim of public schools (the question of higher education lies outside the pale of my discourse) above all things, is to educate practical men, competent to fill the great vacant spaces still existing, increase opulence, and work together in the business interests that engage the minds of all intellectual men. Thus are developed an expansive race, characters quickly resolute, energetic and unwavering in execution. Considerable difference, however, exists between the old States of the Atlantic Coast, the Central, and the Western States. The first already lead a historic existence, in pursuance of which relations, things, and people are similar to those of Europe. The Central and the Western States are still young.

It soon becomes evident that this nation and its children, when compared with ours, are lacking in pensiveness, warmth of feeling, tenderness, and childlike simplicity, and do not enjoy what may be called the fairy life of imagination and heart. Americans unreluctantly acknowledge that they look at things from a bird's-eye view, or at an eagle's perspective. Of great weight in considering their schools and their ready acceptance of what is new and foreign, is the fact that their country is poor in history and monuments; they are not hampered by the strong traditions from the eternal past handed down to old civilized nations like ours. Americans readily comprehend what is new, and incline to making experiments. They are impatient for quick results, even in education. They expect to pick the ripe fruit of pedagogic sciences and skill in an incredibly short period of time. The schemes and policy followed in their schools sometimes foster these forced conditions. Moreover, Americans are easily deceived by first results quickly gained.

America possesses proportionally few highly educated persons. Comparatively few men have more than regular common school education, or have taken the full course of elementary and high schools and attended universities to enter upon life as highly educated men. The educational course of Americans runs in zigzag lines, and is interrupted by other occupations. The adult eventually acknowledges the necessity of education, recognizing insufficiencies not felt at first; therefore we often find wide gaps in the most cultivated American minds. The Americans have been defined as the type of a nation in which gross ignorance never prevails among the masses. There are as few persons wholly uneducated as there are those of high and refined education, so that in general in regard to knowledge and intellectual inter-



ests an equilibrium exists. Americans have an instinctive regard for education, and long for its possession; but not being desirous of gaining knowledge only at school, schools are considered a thing to be dispensed with as early as possible. The popularization of science in America, however, makes learning out of school easy.

There is no other country in the world in which so many learned, popular lectures are delivered. Summer schools are identified with summer resorts only for the purpose of attracting professors to deliver scientific discourses in the quiet of rural surroundings. America has numerous well-edited journals. The English language during the last century has developed into an excellent medium of communication for common intercourse as well as for scientific purposes. In striving to admit as many as possible into the higher institutions of learning, Americans, good politicians as they are, make access to higher courses as easy as possible.

When we consider what each State does and the whole Union does for advanced schools we must conclude that entirely too much importance is attached to them, combined with a certain vanity of higher education. Every American school, of whatever kind, from the university down to the primary school, is, on principle, an affair of the community. The management of common schools is neither an affair of the Federal nor of the State government, but of that of the community. Accordingly, every city, even the smallest, has full liberty to arrange its school system as it will and can. It alone, within the limits of the State school law, has the right of examination, appointment, and supervision of teachers; of prescribing the course of study; determining the methods, aims, and discipline in the minutest detail; planning and overseeing the construction of its schoolhouses; selecting the text-books, and exercising supervision. In consequence, a commendable rivalry is engendered between cities regarding the advancement of their schools; but, on the other hand, a spirit of local patriotism permeates all educational affairs. It is actually difficult to learn from the inhabitants of the city itself what is going on in its schools; and if we examine them ourselves, things sometimes look very different from what we have been led to suppose.

The State requires that the community do everything; so you can readily imagine that the schools of thinly populated districts differ greatly in their results. Poor localities have schools miserably equipped, if they have any at all; while old, wealthy, and large communities have a large number of excellent schools. \* \* \*

The total public school expenditure amounted to \$140,000,000 in 1890. Every pupil annually costs 72 marks; in Prussia 29.74 marks. The difference, however, is deceptive, for the purchasing power of \$1 in the United States is often not greater than that of a mark in Germany; so the average cost of a pupil is about the same in both countries. In considering expenses, salaries, etc., we must not forget that more can be done with 4.20 marks in Germany than with \$1 in America. Public schools in the United States offer gratuitous instruction; there is in many places no charge for text-books, stationery, or reference books used by the pupils. It is customary to have a library in connection with every school, and each pupil under direction is daily allowed to spend from a half hour to an hour in referring to the dictionaries and lexicons for such information as he may need or desire.

Let us see how matters stand in regard to compulsory attendance at school. Legally enforced attendance, as it exists with us, we find only in the New England States, and New York, New Jersey, Texas, Nevada, and California. In Texas and Nevada, however, the conditions of education and the distribution of the population do not permit compulsory attendance. Texas, with an area larger than that of Germany, and numbering only 2,500,000 inhabitants, has vast unsettled districts toward its western boundary. In California the conditions of civilization and settlement make compulsory attendance at school altogether illusory. But what is worse than all is that in none of these States having a compulsory attendance law can a father be forced to send his children to school. Such action contradicts the American conception of personal liberty. There are no policemen for that purpose,

no gendarmes (constables on horseback) to force children to go to school. No judge can sentence a father to punishment for wrongfully keeping a child from school. To be sure, he ought to send his child to school, but it is often the case that he does not do it.

America shows universal weakness in the lack of executive power and vigilance, resulting from the fear of encroaching upon the liberty of its citizens. There is nowhere strict execution of legal orders regarding attendance at school. But we must not forget that in the United States no measure exists by which an accurate list of the number of children who ought to go to school can be made out. Families are not required to announce their arrival and have their names and address, or change of address, entered upon the civil roll at the city hall. Authorities have no means of finding out when children attain the proper age for being admitted into school. We allow ourselves to be hoodwinked when we believe what we read, that in a certain State children are obliged by law to attend school for eight years. A few cities to which the cause of education is dear have instituted a school police force. In Boston these "truant officers," as they are called, number about 16 men, who, voluntarily, investigate the cause of neglect in attendance, and attempt to prevent the employment of children too young to leave the school; but it is impossible for them to fulfill their duty to the full extent. The word "truant" means idler (Tagedieb); accordingly "truant officers" would mean police after loafers (Bummelpolizei). It is almost ludicrous to say that compulsory education is generally adopted in the United States. To understand that neglected children are not disposed to go to school, we must visit the labor quarters of cities like New York, Chicago, etc., and see the children come out of the factories. \* \* \*

According to authentic reports from New York, not more than 72 per cent of all children who should go to school can be induced to do so; 28 per cent, the street Arabs, never attend school. The greater number of these 72 per cent attend only during three to four months of the year, and only about 30 per cent go for four consecutive years. Statistics referring to these conditions, however, are always very imperfect. We naturally ask, "What reason have children for staying away from school?" I have at hand the last school report from Chicago. The school year extends from one summer vacation to the other, from September till June, and the committee of investigation found that during the year 1891-92, 12,900 children missed school from insufficient causes; 9,275 were notorious loafers and idlers who could not be forced into school. Among these youths crime finds its recruits. The other 3,130 cases are thus accounted for: 504 children did not go to school because they worked away from home; 362 were obliged to work at home; 571 were kept at home by parents disapproving of education; 25 because of physical deformities; 390 victims of poverty stayed at home for want of clothing. In all Chicago 32 only had private lessons at home; 879 were always sick; 395 were absent for unknown reasons; 65 were beyond the required age, though still deficient in knowledge.

As many as 1,336 children never attended school on account of the indifference of their parents, the depravity of the father, or the incorrigibility of the children themselves. The reasons given for the latter were intemperance of parents, the father being away from home, or entire abandonment by both father and mother. Seventy-four boys, children between 13 and 14 years of age, declared that their fathers drank, smoked, and never came home at night; 500 boys were said to be in the house of correction; 100 in prison. These figures certainly show a very bad state of affairs; but we must remember that a city like Chicago grows by the influx of people from all parts of the earth, who are not always the worthiest. The following statements are much worse. In spite of all labor legislation and supervision of factories in the United States, certificates for permission to work are given to children who should be going to school. In Chicago, during one year, such certificates were given to 1,077 children, 484 of whom were girls; 98 of these children were 10 years old; 115, 11 years old; 342, 12 years; and 522, 13 years old. The reasons why certificates for per-



mission to work were given in these cases were because the children were poor, or orphans, or had been abandoned by parents, and, most frequently, that the boy might not become addicted to intemperance. We must read such numbers to understand how beneficial and necessary the temperance movement in America is.

Let us leave the city and return to the country in general: In 1890, 22 per cent of the population of the United States, 14,500,000 pupils, attended school; of these 96.5 per cent received an elementary education. We, as teachers, are moved almost to envy, when we consider the number of school days in a year in the United States. The annual average is only 134.3. I believe in Berlin we have no less than 240. Saturdays are holidays throughout America. The 134 school days are an average of terms varying greatly in different States. In the North Atlantic States, for instance Massachusetts and New York, there are 166 days in a school year; in the South Atlantic States, for instance Maryland and Virginia, 97; in the South Central States, for instance Tennessee and Kentucky, 88; and in the Western States, 135 days; New Jersey averages the greatest number of school days, 192; and North Carolina the least, 59; Illinois has 148.

The obligatory course ostensibly requires an attendance of eight years, from the sixth to the fourteenth year. The course of the so-called primary school covers the first four years; the primary school prepares for the grammar school, the course of which likewise requires four years. In round numbers, 12,697,000 pupils out of the 62,500,000 inhabitants of the Union attended these elementary schools during 1890. Of these 12,697,000 only 8,144,000 children attended every day of the average 88 to 135 school days; that is to say, only 64 per cent attended regularly. Every day of the average 135 days, 36 out of every 100 pupils, or 1 of every 3, a very large proportion, missed school. The best attendance is found in Massachusetts. In that State it is 73.7; in South Carolina, 73.4; and in New Mexico, 80 per cent. But this happy State has only 63 days in a school year. To form a just estimate of the general statistics referring to attendance at school, proper allowances must be made for the greater or fewer number of school days in the year. \* \* \*

According to available statistics, the schools of Minnesota are the ones in which attendance is poorest, the number of school days during the year are 120, and only 45 pupils out of every 100 attend. This is probably too small an average, for Minnesota, I believe, possesses excellent schools. Even in a State as old as Maryland, in which Baltimore is situated, only 55 out of every 100 pupils attended school regularly. In the United States the average number of days with a full attendance were 86 out of the 134—namely, a proportion of 40 days nonattendance to every pupil. In North Carolina the number of days of full attendance averaged 37 out of 59; in Massachusetts 135 out of 177; in the District of Columbia (the city of Washington with its suburbs) 135 out of 178; in New York 115 out of 186, and in Illinois 107 out of 148.

The average attendance at school throughout the United States covers four of the eight years; in large cities five to six years; in the South sometimes only one year, occasionally a few months only. This circumstance easily explains the policy of many cities in omitting all studies not absolutely necessary, eventually limiting the course to the three R's—"reading, 'riting and 'rithmetic."

Permit me to dwell for a moment upon the system of these American schools. It is characteristic of the United States that in spite of its vast extent a certain uniformity prevails. The different elements of immigration have not impeded the development of a certain uniform national character; neither have the different languages prevented a uniformity of language. So all schools, notwithstanding their being affairs of the communities, are still governed by a certain uniform system modeled after the English. The first four years, from the sixth to the tenth year of age, are passed at the primary schools corresponding to our elementary schools; the following four years, from the tenth to the fourteenth year of age, at the grammar schools (similar to advanced Volksschulen), succeeded by the high schools in which foreign



languages are begun. It is impossible for a public school pupil to learn foreign languages before the age of 14 or 15 years; until then all language lessons are devoted to the mother tongue. German is taught only in localities where there are a great many Germans, and then under a separate superintendent; lately, the Irish majority in the city councils has suppressed this superfluity.

Four years likewise are required to pass through the grades of the high school, from the last grade of which pupils are admitted into academies, universities, and special high schools. Primary, grammar, and high schools form a clear and simple system. The divisions of the course, or "terms," of the first two are usually annual, those of the high school semi-annual; the one prepares for the other. As I have already said, the majority of pupils do not go to school more than four years, and hence do not pass beyond the primary school. There are only a few private elementary schools, and instruction is seldom given at home. In certain districts there are numerous Catholic and Protestant parochial schools, which include religious instruction given in no public school of the United States, as church and state are entirely separate and independent. Protestant parochial schools are mostly German, and generally excellent; where Germans predominate in large districts they also have their own good normal schools.

To understand the social position of teachers, men and women, it is of great importance to know the relation of the sexes in American schools, both of teachers and pupils; this is connected with the question of the position of woman in America, a question beyond my purpose to discuss.

No distinction in the quality, kind, and aim of instruction is made in any of the elementary schools for boys and girls. In the old States, the sexes are not as a rule instructed together in secondary schools, but in the Central and Western States they sit together from the primary school to the university included. This is the system of coeducation, the education in common for both sexes so highly commended by Americans. At the Congress of Education at Chicago this subject was often discussed; and not one disapproving voice was heard. At first, I was altogether misunderstood, when I explained that our views on the education of girls differ essentially from those of Americans. They see only the advantages of coeducation, believed to cultivate boys, and strengthen girls; and we must accept those peculiar conditions, just as in domestic life the intercourse of boys and girls, adults as well as children, is altogether different from what it is among us; and I doubt its having a moral advantage. Certain it is, however, that the girls on the average are more intelligent than the boys; they go to school longer. In the high schools (corresponding to gymnasias and realschulen) of Chicago the proportion of girls to boys was 3 to 2. As business and politics take up the men's entire time, the women have become the supporters of the higher intellectual interests and the protectors of intellectuality in domestic life.

There are many more women than men teachers; in fact, the latter are so rare that the word "teacher" in school reports is considered of feminine gender. In the year 1890 the large number of 363,935 teachers were employed in the public schools of the United States; of them 238,333 were women, so that the percentage of male teachers was only 34.5. In the North Atlantic States, like New York and Massachusetts, only 20 per cent of all the teachers are men; women teach even in the high schools. Had I not been accustomed to similar experiences in England, I should have been more amazed to hear Cicero's speech for Milo interpreted to the pupils of a Latin class presided over by a young lady, or to see 30 young ladies working away at integral calculus under the direction of a female professor. The teachers' roll—I speak of Chicago, because in that city I had the opportunity of studying everything in detail—has few men's names. Of 100 "college" graduates admitted to the university only 20 were young men; the other 80, young ladies; hence, as far as intelligence can be extracted from books or procured at school, the women are ahead of the men. Out of 3,000 teachers I counted about 200 men; the names were not separated in

the list. Even the influential positions, up to that of school commissioner itself, are not seldom filled by women.

When, after a long interim, a city normal school was reorganized in Chicago last summer, 149 young ladies and only 1 young man applied for admission. Male teachers predominate only in the States with a large negro population; so in the Southern States we find 60 per cent male to 40 per cent female teachers.

In a great many communities male and female teachers draw the same salaries. Equal pay is given for the equal work demanded. Another question of interest to us is, why so few men become teachers. The principal reason is that the remuneration is so very moderate in proportion to the cost of living and to what can be earned in other professions; moreover, a teacher rarely acquires celebrity. In America there is no profession of teaching; teachers do not continue to be teachers; they are rather dependent, as a rule, and are not much thought of. Most teachers of public schools accept their positions as a transient stage; we often read in the lives of prominent Americans that they taught in their youth. The long school vacations are made use of to prepare for the university, or to study law or medicine, the two favorite professions in America. Naturally, there is a paucity of experienced teachers.

In Illinois it was proven that of the 25,000 teachers in the State the average time of service was four years. The majority, male and female, are young beginners; female teachers are also found in the Central and Western States, where there are fewer women than men. Liberty in all business relations is so great that men will not remain in other than high, well-salaried positions. We must bear in mind that permanent positions to which a pension is attached are not known in America. The army, independent of politics, is the only institution with permanent positions which has a most admirable corps of officers. Teachers are appointed on time; and in many States only for a year at first, and this is done on principle. Practically, the rule is not so strictly observed; there are teachers who maintain their positions, always presupposing that great political changes will not influence municipal authority; here we meet the greatest evil of the whole public-school system of the United States—the influence of politics upon schools; teachers, and educational affairs to their minutest details, are often affected by political changes.

In many cities the administration and superintendence of schools, the appointment of teachers, and promotions are purely political questions. Change of party rule often brings about a change of the whole personnel of schools, from commissioners and superintendents down to the ranks of the teachers. This, together with other things, creates a want of stability in American schools; there are no traditions of pedagogic experiences, neither in a school nor in a city. How different in Germany! What an abundance of traditions and pedagogical experiences are collected in a normal school one hundred years old! In America hasty experiments replace the slow growth in Germany. The new principal, the new member of the school board, and the new administration, are too impatient to carry out their political and moral views and ideas during their term of service. No one has time to finish his work, for he does not know how long he may be engaged in it; but everybody experiments. On the other hand, this constant changing is an advantage to education; nowhere outside of America are new ideas more easily brought to light and put into practice. In Germany and other European States a whole life must be devoted to carrying out a single wholesome idea. In America any capable man soon finds a city, a school, or an endowed institution that permits him to realize his pedagogical idea.

To merely touch the question of normal training of teachers in a word, Americans themselves best know that, on the average, it is still inadequate. The minority of teachers are educated at normal schools. The ever changing board, the superintendent, or occasionally a lower official, often influenced by politics, decides upon a teacher's capacity. A definite educational policy is not prescribed, and there is no uniform examination. Every city or county is at liberty to determine its own



standard, be it high or low. A preparation in pedagogics for the profession is almost entirely wanting; in fact, the principle has been enunciated that a teacher in the public schools need not know more than he must teach, and that a knowledge of his text-book is sufficient. Primary school teachers often have not studied beyond the grammar school; sometimes they even speak faulty English.

I very well know that America has excellent institutions and brilliant teachers, but we must not look only at the flower so willingly held out to us. We must not limit ourselves to cities renowned for their schools; we must ask how matters are in general. According to the judgment of a very competent American school-teacher, the work done in normal schools does not compare with that of a German seminary. Pedagogically and scientifically restricted, the teacher naturally becomes dependent. The principal and inspector instruct him weekly and even daily, prescribing the daily lessons in every detail. Thus the opinion gains credence that the achievements of a school are attributable to the board and inspectors, and not to the teachers. Teachers must first be prepared.

There is no professional body of teachers with determinative power, no faculty meetings that have decisive disciplinary and other powers. In many cities the teacher is a poor day-laborer who earns his bread in sorrow and fear of the Damocles sword of loss of position which hangs over his head. In the whole country there is no profession of teaching which rests on an average uniform education, the consciousness of professional work and its magnitude; the nation, as such, does not recognize it. Teachers have no representative corporation; what we hear of the national association of teachers and the great congresses are, with very few exceptions, all efforts emanating from secondary and higher schools, in which only principals, inspectors, etc., participate. This deficient professional preparation of the public school teacher is, next to political influence, the most vulnerable point of the whole American school system. It is evident that the achievements of even a highly gifted people must fall below a high standard under such a régime.

The schools in the cities are usually under the direction of a board of education, appointed according to the city statutes, either directly by popular election or indirectly by the mayor or judges, these personages being considered less likely to be influenced by party prejudice. The members of the board also may be appointed by individual magistrates. \* \* \* The best arrangement seems to be found in cities, like Indianapolis, where the mayor appoints the board of education that elects a superintendent, and in large cities, his assistants. The entire work of the school falls upon them; they are often professors, but just as often men who have practiced other vocations. The chief superintendent in Chicago was formerly a lawyer, Dr. Lane, a very capable man, and specially enthusiastic in educational work.

Good school inspectors or superintendents do not stay long in one position. In the first place, they are politically dependent; secondly, larger salaries and other greater inducements draw them from one city to another. In many cities the general condition of schools and their administration is in a transition state, in consequence of which no pedagogic tradition or habits of administration can be formed in the schools. \* \* \*

Permit me to say a few words on the pecuniary circumstances of American teachers. The entire school expenditure of the city of Chicago, with a population in 1892 approximating 1,614,000, amounted to \$4,015,000, or 16,800,000 marks. Two and a half million dollars, considerably more than one-half, was appropriated for salaries. Salaries of principals of grammar schools are divided into groups proportionate to the number of classes and pupils in their schools and the amount of work to be done. The first group of principals of grammar schools receive \$1,050 the first year and the salary increases every year until it amounts to \$1,200. The second group ranges from \$1,200 to \$1,400, the third group from \$1,400 to \$1,600, and the highest group from \$2,300 to \$2,500.



Principals of primary schools begin with \$1,050 and never receive more than \$1,600. In a city like Chicago, where a workingman receives on an average of \$2 a day, men and women teachers in primary schools begin with \$400, or 1,620 marks, for the first year. The second year they receive \$475; the third, \$575; the fourth, \$650; the fifth, \$700; the sixth and the following years, \$775; i. e., teachers can receive as high as 3,250 marks—a proportionately small sum considering the necessity of the position, with no pension, no provision for widows, etc., attached. Teachers in grammar schools are somewhat better situated; they receive \$450 the first year, then \$525, increasing in eight years to \$800, or about 3,350 marks. Substitutes receive \$1.50 a day, after they have been tried six months. The so-called school cadets—pupil teachers in fact, whose employment was a necessity in years past in Prussia—also receive 75 cents a day for their work, which they perform under the supervision and guidance of a regular teacher. When we compare the purchasing power of a mark and a dollar, we understand that small salaries are the reason the teacher's profession receives so few accessions.

Two years ago, after a number of contradictory views and opinions had been expressed on the school system of the United States, a popular New York magazine, *The Forum*, instituted inquiries on its own account. Dr. Rice, who had studied under Professor Rein in Jena, and acquainted himself with educational matters in America, was commissioned to visit the larger cities in order to investigate their system, administration, and educational conditions. He visited 36 cities of the Union. Every city considers its schools and school buildings the best. It is an excellent arrangement that anyone professionally interested can unceremoniously enter American schools at any time. "We have nothing to conceal, and are always ready to learn from you," was said to me.

Dr. Rice's tour of inspection resulted in a book on the public school system of the United States in 1893. It contains a most unbiased and exact representation of the conditions of certain schools, together with their administration, as he observed them. The cities are mentioned, but not the names of the schools and teachers. It is an excellent book, containing everything that the author himself saw and experienced. And we must remember that he is a modern educator of the Herbartian school, one of the numerous younger American men who passionately and zealously apply psychological principles to education.

The publication of his book caused an unpleasant excitement, because he laid his finger on many an open wound. We know that America in education, as in everything else, is a land of contradictions; the very latest psychological methods are practiced together with the most antediluvian methods. At present two pedagogical currents are opposing each other in American public schools; the old so-called "drill method," based upon very meager but fixed knowledge acquired by strict discipline and persistent cramming, and the new psychological method, which, based on a thorough understanding of a child's mind, begins with its first ideas, and continues to add others with the purpose of developing a harmonious education of the whole being, the moral and physical as well as the intellectual.

Even though the new current has added manual training, hygiene, and a knowledge of civil government to the curriculum of study, and improved the scientific course; even though it advocates mild instead of harsh measures in dealing with pupils, still it can not be said that the old method is entirely without justification. We can not altogether condemn those who think that Americans need a different kind of school. I most assuredly lean to the newer methods.

Dr. Rice mentions in his book that the worst public schools in regard to method and organization are those of Baltimore, Buffalo, Cincinnati, New York, Milwaukee, St. Louis, Chicago, and Boston. It is surprising that Boston should be mentioned. In the *Neue Lehrerzeitung* of July, 1893, Marcus Fuchs describes the Boston school system as being excellent; but I missed a thorough statement on elementary education in that article which would support the praise bestowed. What Dr. Rice says in regard to the location and sanitary conditions of certain schools in the far-famed city

of Boston is, in truth, astonishingly bad. However good the secondary and grammar schools are, improvement seems wanted in the elementary schools. Washington, Springfield, and Quincy form a better group. The last mentioned has for a long time been a kind of American Mecca for educational pilgrims. (A number of years ago I first learned, from an American teacher of the Quincy method, concentration of instruction in certain studies.) Under the new administration, however, its schools seem to have retrograded. Indianapolis, Minneapolis, St. Paul, and particularly Laporte, Ind., possess the best public schools, according to Dr. Rice. In Indianapolis the good conditions of public schools is ascribed to the fact that the mayor appoints the school board, that the sensible action of the citizens is not influenced by politics, and that good teachers are introduced from other cities. Laporte is a small city in Indiana with only 40 teachers; but a famous educator is superintendent here. The name of Dr. W. N. Hailmann is conspicuous in congresses and the educational press. The excellencies of the schools at Laporte are very great, particularly in natural history, drawing, and English. They showed it at the World's Fair and they are excellent at home.

The best normal school is probably the Cook County Normal School in Englewood, near Chicago, under the direction of Colonel Parker. Next to this normal institute the College for the Preparation of Teachers, in New York, deserves mention. I recommend this book of Dr. Rice to all who wish to acquaint themselves with American methods of teaching. Almost incredible instances are cited. For instance, an American teacher in teaching geography asks: "What senses are brought into action during the geography lesson?" The children answer: "Hearing, for the teacher speaks; sight, for we look on the map; touch, for we point with our finger to the things." Teacher: "We will close our atlas; how many senses do you make use of now?" Answer: "Hearing," etc. That was the beginning of a geography lesson! Here is another example. A class in the second grade is to read a short piece, and the teacher having run aground on a method, says to herself: "In reading we must enunciate clearly and with expression." As a preparatory exercise for distinct enunciation all the children must begin by practicing the vowels aloud, with the proper position of the vocal organs. Furthermore, the tongue must be relaxed, so the 50 children stretch out their tongues, and move them to the teacher's beating time. Thereupon the teacher says: "You have done that very well; now we shall practice expression. Heads back!" All the 50 children throw their heads far back. Teacher: "Now say, 'I am proud, for I know who I am.'" The children do as they are told. Teacher: "Heads on the left shoulder! Look upward! Speech: 'How beautiful that is!'" (Expression of astonishment.) "Heads on the right shoulder! 'Do you think you can mock me?' Heads down! 'All my money is gone!'" Imagine a whole class saying, "All my money is gone," to practice the expression of sorrow. Finally, a few other exercises to express increasing pleasure. Teacher: "Children, pay strict attention! What would you say if you were to receive an orange now?" All smile. "If you had a banana?" Broader smiles. "If you were to get a piece of candy?" Laughter. "But ice cream?" Shouts of laughter. "So," says the teacher, "now the class is prepared to read the piece." Of course the children read with expression; that is to say, every child in the worst possible manner of mimicry reads the story in which Katie says to Molly: "Be very good while I am gone, and do not get into mischief."

Such are two of the numberless examples cited by an impartial man, who can have no interest in defaming the schools of his country, but who is honest enough to say, in the face of local patriotism, how matters stand. In Chicago this publication awakened painful surprise.

Of course, he mentions other and excellent achievements found in Minneapolis, Indianapolis, and Laporte, and specially in regard to the education of the pupil in self-observation, drawing from nature, and illustrating what he has learned. For instance, the pupil reads aloud, and writes on any subject of natural science; and writing a composition, illustrating it neatly.



I must break off here. To what conclusion do we come? America, throughout, shows itself to be a young, unfinished country, with power, strong will, and great aspirations, a country of irreconcilable contradictions in which inexplicable things are tossing about, but a country which is united with the best possible spirit, and is free and open to every new thought. Still, I believe that we Germans have no reason to be envious of the school system of America.

### THE EXHIBIT OF RESULTS OF MANUAL TRAINING.

By Prof. STEPHAN WAETZOLDT, of Berlin.

#### THIRD LECTURE.

LADIES AND GENTLEMEN: Allow me to remark, by way of introduction, that your honored president selected a subject for me to discuss which is so extensive that when I received the announcement I was frightened. I am sorry not to have enough material gathered to do justice to the subject as announced: "Report on the exhibit of the results of manual training in all the countries of the civilized world." I can do no better than to consult my notebook and draw upon my memory for what I saw in the World's Fair at Chicago, in order to offer a report on the present status and the methods of manual training in some countries. I shall supplement it by a statement of what I witnessed myself in American schools.

When the minister of public instruction planned the great German educational exhibit the question arose, "Shall manual training be included?" But after considering the fact that this branch of educational work is not a legal part of school education in Prussia, that it is not a regular branch of study, but is left to private initiative, it was resolved to leave it out, as had been done with the kindergarten display. Still, it seemed desirable to show to the Americans what is being accomplished in this branch, for they would be apt to presume that he who fails to exhibit either has nothing to exhibit or shuns competition, his achievements being inferior. Hence it was determined to exhibit merely in a few groups what is done in this direction in Germany. Your president, Mr. von Schenkendorff, was able, in his usual energetic way of acting, to collect in a very brief period of time, a beautiful exhibit of results of manual training for Chicago. Several of you saw it last February, when it was exposed to view in the House of Deputies. There it occupied two halls. It was of course out of the question to obtain as much room in Chicago as that for only one branch of our exhibit, hence a selection was made. From the Berlin and Görlitz workshops for pupils we selected a number of objects of pupils' work in paper, pasteboard, wood, wood carving and joiner work, which illustrated the course of instruction and the aims to be reached. I am sorry to say it was impossible to take with us the whole of the beautiful collection of the normal school for manual training teachers in Leipzig, which was designed to show the assistance manual training can render the regular school instruction; but finally we made a judicious selection from this collection.

In Chicago this exhibit found room in a very suitable place in the passage between the galleries occupied by secondary and elementary schools. There we spread the work on three enormously large tables in eight glass-covered cases, where they were kept safe from dust and moisture during the entire summer. The objects were systematically arranged and marked by English and German labels. It was not possible to place everything side by side, hence we had to arrange them in several tiers, one above the other. We supplemented the actual work by abundant technical literature, annual reports, programmes, etc. Adjoining these tables was the exhibit of the Realschule in Bockenheim that had been admitted by permission from the minister of instruction. It contained photographs of the shops and specimens of joiner and pasteboard work. This collection received also an award.

It was fortunate that we had specimens of pupils' work in manual training on exhibition, for as the first question was invariably, "Where is the written work of



your elementary schools?" the second invariably followed, "Where is your manual training work?" That proved that much attention is bestowed in America upon this subject, and that in America the custom is still in vogue to look upon Germany as the leader in educational movements. Other questions were asked, such as "Is manual training generally introduced?" "How many schools do not give manual training?" "Is manual training obligatory in the elementary schools?" "At what age is it begun?" "What is the course, the end to be attained, the number of hours devoted to it?" "Do the communities furnish tools, apparatus, and material free of cost?" In America the expenditure for this branch is borne by the community, though it is not large as yet. Where manual training is introduced the authorities furnish everything needful—shops, tools, and materials.

The opinion of American educators of our manual training exhibit was, on an average, very favorable. We were told that the German course of instruction was methodically clear, the work on exhibition very good, carefully and tastefully executed. The Americans do not work as neatly and elegantly. They do plain work, as is seen in their machines. Where Frenchmen and Germans build in fine, ornate lines, the Americans build on a large scale, strong and as simple as possible. This tendency to quick and simple production, which does not permit the objects to appear elegant like ours, was noticed everywhere. Our wood carving (the so-called scallop-cut design) made the deepest impression upon the beholders, in view of the early age of the pupils who had made it. The taste, the sense of beauty, in the combination of models and their execution, was very pleasing to Americans. But they missed larger work, especially that which is immediately applicable, as, for instance, work on a wagon that needs repairing; work such as a farmer would need to perform whose plow is broken, or work done in the house in repairing broken furniture. The American training, especially in agricultural colleges in the Central States, is intended to a certain extent to enable farmers to repair their agricultural implements and to use the saw, plane, and forging hammer.

Our work was praised for its underlying systematic course, its clear methodical treatment, and its artistic execution. Another difference between German and American manual training was observed in this, that the American boys are furnished half-finished material prepared by the machine; Americans deem it waste of labor to do by hand what may be done by machines. Hand work is confined to that which can not be done by machines. This naturally gives to manual labor a higher value; it is ennobled when removed from the mere mechanical part, and is consequently better paid for.

In my notebook, under date of May 28, I find a memorandum of a visit to our exhibit by a Brooklyn expert who declared that he had never seen such artistic pupils' work. His countrymen were not deficient in well-defined methods, but they experimented too much. "It is true," he said, "that manual training is introduced in many cities, but their results are chiefly used for show purposes." So, you see, we may claim to have met with success; but it is my personal impression that the good opinions of our German manual training work are too favorable, and I arrived at that conviction when I saw what other nations had accomplished. That our pupils' work was considered characteristic is proved by the fact that the exhibit of the Society for Manual Training was one of the first objects purchased by the Americans. Professor Wilson, of Philadelphia, bought it for the school museum of that city; also the literature belonging to it was bought. In Philadelphia our small exhibit is to receive a place side by side with the Japanese, Russian, and French work.

Before I turn to the exhibit of pupils' manual work from American and other States, I desire to touch upon questions such as "What is the natural talent of the Americans for such work? What is their system? What circumstances have essentially aided in developing manual training?" An Englishman, Mr. Mather, of Manchester, says in his report on technical education in the United States, "All Ameri-

cans have more or less talent for manual labor; this is a characteristic of the race." During the colonial period, or at the beginning of the settlement of the extensive West, they lived far apart, not together in cities and villages, hence they were obliged to perform all kinds of labor themselves. In consequence of the habit of self-activity manual work and skill have always been held in higher estimation, generally, than in Europe. A second reason is that the entire school system is organized essentially upon practical principles. It aims at that which is applicable in life, or immediately useful. Such things the American understands first of all. Manual training has not been engrafted upon the schools, but is considered a useful and naturally grown branch of education. The educational and ethical side of the question is taken into consideration afterwards.

The large American educational journals have taken cognizance of the subject and discuss it freely. Thus in the *Journal of Education* of 1893, for instance, we find a series of articles on joinery, and other comprehensive presentations of certain parts of manual training, with exact illustrations. When at first teachers were wanting for this instruction the authorities helped themselves in other ways by employing artisans. The American looks sharply about himself in this world, and whenever he finds anything good he tries to acquire and develop it. Hence he is ever ready to make educational experiments. During the last ten years manual training has gradually entered the public graded schools and progressed rapidly.

Two currents are noticeable in American manual training. The first follows the principle that manual training should be a part of every division of education beginning with the kindergarten. The kindergarten forms in America the basis of the entire public school system, and is closely linked with the ideas of Froebel. The name of Froebel is nowhere pronounced as often as on the other side of the Atlantic. Starting from Froebel's idea of occupation, games, manual work in paper folding, stick laying, modeling, etc., begin in numerous kindergartens. It is a peculiarity of the American school that modeling is begun with very young children; first, sand is used, then clay, and it is continued side by side with instruction in drawing through all the grades, and considered as necessary and important as instruction in scientific subjects. The entire instruction in manual work is facilitated and brought into organic connection with the other school work, by teaching drawing from the lowest grade upward throughout the course. We often find it said: Drawing is as necessary to a human being as writing; an educated man can not do without skill in drawing any more than without skill in writing. The ability to expose one's thoughts in writing is not sufficient. The pupil must be educated to describe, sketch, model, and paint an object only if he is able to present it correctly; thus can he be said to have comprehended it fully. This connects the manual work organically with the other school work. In the higher classes we find wood carving, joinery, and light metal work that can be performed without the use of fire. To this must be added, that in many schools simple apparatus for instruction in physics is made by the pupils themselves under direction of the teacher. The American school has little or no use for our scientific and often very complicated appliances.

At present all large cities in the United States have one or more public schools in which manual training is given in a course of four to eight years. This is made an integral branch of study and occupies from two to four hours a week. The most extended observations concerning manual training seem to have been made in New York. The views entertained and the experience gained in that State go to prove that children who are deficient in literary skill, and who are weak in language studies, are generally found more talented in manual skill. Talent for mathematics, physics, and other natural sciences is generally coupled with manual dexterity. Dr. Adler, in New York, writes: "Boys who were considered stupid, and at last believe it themselves, were soon found to be the first in manual skill in the workshop and in scientific instruction that required observation. They regained the respect of their fellow-students; and the success they achieve in manual training gives them back



their self-respect, and spurs them on to do greater things. For this reason, if for no other, manual training should be made a part of all school instruction. It develops the mind of many a child that can learn but poorly from books." He also claims to have noticed that manual work essentially aids the progress made in drawing and geometry; that relations of space, observed by both eye and hand simultaneously, become clearer and more exactly understood.

The second current noticeable in the manual training movement in America is to make manual work an essential part of secondary education. The high school (corresponding in a measure to our secondary schools) should, it is claimed, exhibit not only as heretofore a bifurcation, but a trifurcation. As is done in France, the student when entering the high school elects his course of studying, either the scientific or classical course. Now, the reformers intend to institute a third branch or course, the so-called manual training high school. In these schools the thirty hours of work per week should be so divided as to give ten to manual training in shops and five to drawing. That is to say, the new school is not to be a trade school, but the manual training it offers shall, in the widest acceptance of the term, be the basis of general education, including English, mathematics, and modern languages. I shall, in the course of my remarks, return to this subject.

The general movement in introducing manual training in the schools has become a very strong one. It has grown rapidly in the large cities; in Boston and New York it may be said to have become fashionable. In New York the opposition in the press and the public was at first very vigorous. Modeling in clay was said to be conducive to transmitting skin diseases; that standing at the workbench would cause crooked legs; the boys would not grow up straight; they would be educated to be artisans, a thing that was not desired. In New York, manual training was introduced in five city schools in 1888. The pupils who desired to take part increased rapidly, and in 1893 the city had 500 teachers for the manual training of 22,000 pupils who learned manual work. This number is not so great when you consider that girls who learn needlework and cookery are not counted in. But in some schools the boys, too, learn cooking, no difference being made in regard to the sex of pupils. Think of the increase: 500 teachers and 22,000 pupils in six years. New York has now in the large college for the training of teachers an institution where teachers are practically prepared for giving manual training. I have already mentioned the fact that in the models of work furnished in the American manual training schools a lack in artistic taste is noticeable.

Permit me to give a brief statement of the exhibits of manual training from different States of the Union. First, I shall mention what occurs to me as having been exhibited by the Atlantic States, then by the South and Central States, in which manual skill is fostered. I found good ironwork from Baltimore; woodwork from the negro school in that city; wood and iron work from the manual training school; among the specimens on exhibit some machines built by students and apparatus were used in instruction in physics. Louisville exhibits excellent woodwork, both of wheelwrights and joiners. Then the three cities in which the public schools are said to be the best: the sister cities Minneapolis and St. Paul, Indianapolis, and Laporte, which, according to the Swedish system, had furnished a very good exhibit of pasteboard work, wood carving, and ironwork. From the more Western States remarkably good work was sent from Nebraska (Omaha) and Washington (Tacoma and Spokane).

The Central and Southern States also exhibited manual work of pupils, and it was very obvious that objects and materials changed according to the needs of the country. From Mexico, the city of Puebla sent boys' work which was made of onyx, a semiprecious stone. Argentine undoubtedly had the best exhibit of all the States in South America, only it was placed in a dark corner and was not seen by many. That collection showed excellent work in leather and other saddler's work, also joiner's work. This work was a specimen of what a country needs in which agriculture and stock raising is carried on.



Japan had furnished an exhibit in which one could see that, though the nation has developed in a peculiar and characteristic way, it is imitating Europe. The influence of Europe has become very strong. I saw very excellent needlework and beautiful woodwork made in boys' schools in Japan, after drawings from nature in Japanese fashion. Of the Australian States, New South Wales furnished characteristic work—that is, a collection of work in tailoring and dressmaking, simple garments such as are used on the farm.

Lastly, I may mention the most remarkable points of the European and Asiatic exhibits. The French exhibit was small but very well selected. I received the impression that France has become our closest competitor in education generally, and especially in the elementary schools. I do not hesitate to admit that it is vastly superior to us in manual training. In America public opinion begins to change. French schools are thought by some to be superior to ours. A distinguished American educator, Dr. Monroe, expressed this view without reserve, saying: "The new ideas in education at present come more from France than from Germany; we must turn to France to become imbued with the spirit of modern times; it is from there we get new suggestions and ideas."

There was no dissenting voice in regard to drawing. In drawing the "*Écoles secondaires*" of France are superior to all other schools. It is significant that the drawings made there are much larger than with us; so are the models. Caps of columns for instance, were drawn nearly of natural size. The best work was sent by the city of Poitiers. The city of Paris had its own exhibit of manual training in the state pavilion of France. This exhibit proved conclusively what a happy thing the French Government had done when it organically connected manual training and the continuation schools with the people's or elementary schools. It thus enables the pupils to follow their own individual talent in selecting suitable professions and occupations.

As to Russia, the Americans said: "In manual training Russia stands at the head of all nations." If we take as a criterion the great number of schools in which manual training is offered, this praise is well earned. I do not know the Russian system of public instruction from observation, hence I refrain from expressing an opinion. But I do not hesitate to praise the Russian technique, especially the work in different kinds of wood and the work of the peasant schools. Military uniforms made in the orphans' schools were exhibited. The girls' schools, established by Empress Maria, exhibited remarkably excellent needlework. We also saw work in gold, engraving in silver and copper, not done in special or professional schools, but by boys in manual training classes.

In Egypt we find instruction in manual work fashioned exactly and sensibly in accordance with the needs of the country. Side by side with editions of the Koran and bamboo penholders, we find work in cedar wood, done in the schools of Cairo; also the odd, inlaid work of mother-of-pearl and wood seen in the Orient, made by young boys. The schools of the "Alliance Israelite," the influence of which is felt around the eastern Mediterranean, had exhibited from the Jewish schools in Tunis work in chasing on copper, in the style of that country. England exhibited very little. Only the school board of London showed wood and pasteboard work from elementary schools. But that England does not stand low in the scale of skilled workmanship is presumed from the fact that manual skill is valued very highly in England and America. Depreciation of manual labor as compared with mental labor is not found there; manual labor is not thought humiliating to anyone. A French observer, Max Leclerc, who quite recently investigated the conditions of England, says that in nearly all English schools, from the elementary to the aristocratic "public schools," so called, manual training is offered; and he then points to the enormous importance this instruction must have for the progress in technical and industrial pursuits.

During the Exposition in Chicago congresses of education were held from July 17 to 24, with more than 120 sessions. Among these congresses was a department devoted to manual training, skillfully connected with that of art education of the young. The department held 12 sessions, 3 of which were in connection with the kindergarten congress. They were well attended, and the interest evinced in the subject of manual training was intense. From the great number of papers read I mention merely the most important: (1) Professor Richards, from the Pratt Institute, in Brooklyn, spoke on "The educational object of drawing and manual training;" (2) President Walter Hervey, of the College for the Training of Teachers, in New York, spoke on "Manual training in the American system of schools" (this college has a special department for the training of manual training teachers); (3) Dr. Emil Hirsch, of Chicago, on "The ethical side of manual training;" (4) Prof. Gustav Törngren, of Stockholm, on "The history of tools;" (5) Prof. Earl Barnes, of the Stanford University, at Palo Alto, Cal., on "Spontaneous drawings of children." This lecture was made exceptionally interesting by an exhibit of numerous children's drawings found on the walls and fences and in exercise books. In them the individuality of the child's soul in observation and reproduction of characteristic features in form and movement was illustrated. (6) Dr. Paul Carus, of Chicago, spoke on "The philosophy of tools;" (7) Miss Mary T. Chapin, of Boston, on "Decorating the schoolrooms by the pupils themselves;" (8) Dr. Leipziger, of New York, on "The physiology of manual training in high schools;" (9) Miss Dora Hicks, of Boston, on "Color sense of children."

Permit me to refer again, in a few words, to the peculiar manual training school in Chicago. It is called the English High and Manual Training School, and is situated on Monroe street. I made my visit to that school in company with Privy Councilor Dr. Bertram. We were both of the opinion that what we there saw was praiseworthy and new. The school was established by the Commercial Club in 1888, with the avowed purpose of fostering manual skill as an element of general culture during the high school years (14 to 18). In 1890 the city took charge of the school, numbering then about 260 students. In the northwest and southern portions of the city two more such manual training schools are being established. All the expenses, except a small fee for materials used by the pupils, are defrayed by the city. Instruction is gratuitous. The course is one of three years.

The studies in the first year are distributed as follows: Algebra, 4 hours a week; zoology (during 24 weeks), 4 hours a week; botany (during 16 weeks), 4 hours; American literature, 3 hours; composition and letter writing, 1 hour; free-hand and mechanical drawing, 5 hours; joinery and carpentry, turning, modeling, 10 hours. Information is also given concerning wood as material and as merchandise.

In the second year the following course is pursued: Geometry, 3 hours per week; physics, 3 hours; universal history, 3 hours; English literature, 2 hours; composition and business forms, 1 hour; free-hand and mechanical drawing, 5 hours; lessons in the workshops, learning to use the tools in smithing, forging, and welding, 10 hours. Information is also given concerning iron as material and in commerce.

In the third year: Trigonometry and higher algebra, 3 hours; constitution and political economy, 2 hours; English classics, 2 hours; mechanical and architectural drawing, together with free-hand sketches, 5 hours; construction and the use of machines, 10 hours. Besides, information is given concerning machines, their history, construction, and cost. During the second and third years a certain number of optional studies are offered, for instance, German or French, instead of English.

This high school is like other high schools in many respects. It graduates its students, for instance. A second and a third of this kind of school are soon to be opened in Chicago; manual training in them is not to be an ornamental branch, but one of the essentials. It is to occupy, together with drawing, 15 of the 30 hours per week. Manual work is not to be a gingerbread affair, but hard, serious work, under direction of thoroughly equipped artisans and technical experts. It appears to me that for manual work, skilled artisans and experts are preferred to academic teachers.



The enthusiasm of the boys in this school in their manual work is quite obvious. We saw boys varying in age between 15 and 19 years. Most of them had passed through the first nine years of the primary and grammar school courses, and now occupied most of their time in working in wood and iron and in the machine shop. These young people executed their work zealously and skillfully; they exhibited a feverish pleasure in laboring especially in the smith shop at the anvil. Material, and the tools used, are precisely as they are found in shops for adults, not "in miniature." Quite a number of these students enter commercial and other practical occupations, but most of them enter technical pursuits.

The expense to the city of Chicago for the maintenance of this school is quite considerable. The site of the building represents a value of \$50,000; the building cost \$27,000; the equipment \$1,500. During the year 1891-92 the salaries paid the teachers alone amounted to \$24,865, or 104,006 marks. The costs per capita were 520 marks a year. The salary of the principal is \$2,600 and that of the teachers averages \$1,800.

The Americans have here, in obedience to the popular demand for manual training, developed a new and peculiar kind of secondary school quite in harmony with their pedagogy, which places in the foreground that which is practical and immediately applicable. Their watchword is, "To know and to do," that is to say, "It is well to know something, but we must also be able to perform, that is, apply our knowledge."

Mr. Constantin Nörrenberg, librarian of the University of Kiel, Germany, came to Chicago as the representative of his Government to act as commissioner of the German library exhibit. He attended the international congress of librarians, and was particularly active in examining the history and development of the library movement in America. His report was published in the *Centralblatt für Bibliothekswesen*, vol. 11, 1894, Leipzig, and is worthy of perusal, since it gives a brief but good account of the congress of librarians, and is full of shrewd observations concerning the American public library. Mr. Nörrenberg succeeded in establishing an exchange with European libraries, particularly university libraries, which will doubtless result in enriching these institutions on both sides of the Atlantic, and make the public documents of Europe available to students of education, who hitherto have been troubled in securing desirable matter.

## THE CONGRESS AND THE CONFERENCE OF LIBRARIANS IN CHICAGO.

Report by Mr. CONSTANTIN NÖRRENBURG,

Librarian of the University of Kiel, Germany.

The first conference of librarians took place in New York September 15-17, 1853, forty years ago. Its proceedings are reported in Norton's *Literary and Educational Register* for 1854. Although intended to be an American gathering, it was, in a certain sense, international, for two letters sent by French colleagues were read, one of which (from Alexander Vattemare) proposed an international exchange of State publications. A resolution to assemble at stated intervals was passed, but not carried out until many years afterwards, when a second conference was held in connection with the World's Exposition in Philadelphia (1876). This conference led to the organization of American experts by the formation of the American Library Association (A. L. A.).

The next year, 1877, witnessed an international congress at London, in which America was comparatively better represented than the European continent. The Library Association of the United Kingdom (L. A. U. K.) was formed on that occasion, and since then the librarians of the two nations of the English tongue have held regular conferences, in which they possess an invaluable organ for the exchange of experiences, the fostering of professional spirit, and the promotion of an institution of culture to which they have devoted their lives.



The World's Congress of Librarians in Chicago was not called together by the American professional librarians; it formed a part of the long series of world's congresses that accompanied the World's Fair, and constituted only a section of the literary congress, sharing with it the rooms of the Art Palace and the attention of the public. Naturally it fell to the A. L. A. to invite the colleagues of the world to this and to conduct the proceedings. Expediency suggested that the A. L. A. hold its own conference, the sixteenth annual, in connection with this congress, and it was but natural that the same persons attended both meetings.

Only three foreign librarians were present: Peter Cowell, chief librarian of the public libraries of Liverpool; Miss Mary R. S. James, librarian of the People's Palace Library, London, and the writer of this account. Other well-known librarians present, all of the United States, were: G. H. Baker (Columbia College library); J. L. Tomkins (library University of the City of New York) and his first assistant, Charles A. Nelson; Melvil Dewey (State library and the school of librarians in Albany, N. Y.), with his assistant, Miss Mary S. Cutler, and the cataloguer, W. S. Bischoe; W. H. Brett (public library, Cleveland, Ohio); G. W. Cole (public library, Jersey City, N. J.); F. W. Crunden (public library, St. Louis, Mo.); C. A. Cutter (formerly of Boston library) and W. C. Lane (present chief librarian of the Athenæum, Boston, Mass.); W. I. Fletcher (Amherst College library); S. S. Green (public library, Worcester, Mass.); F. H. Hild (public library, Chicago, Ill.) and his assistant, E. F. L. Gauss; F. P. Hill (public library, Newark, N. J.); J. K. Hosmer (public library, Minneapolis, Minn.); G. M. Jones (public library, Salem, Mass.); Horace Kephart (Mercantile Library, St. Louis, Mo.); W. F. Poole (Newberry Library, Chicago, Ill.); R. B. Poole (Young Men's Christian Association Library, New York). Among the ladies present there were, aside from those mentioned before, Miss Tessa L. Kelso (public library, Los Angeles, Cal.); Miss Cath. L. Sharp (Armour Institute, Chicago, Ill.); Miss Lodilla Ambrose (Northwestern University, Evanston, Ill.); Miss Zella Allen Dixon (University of Chicago); Miss Theresa West (public library, Milwaukee, Wis.); Miss Jessie Allen (public library, Omaha, Nebr.).

The publishing trade was represented by the firms of Messrs. Scribner's Sons, B. Westermann & Co., and G. E. Stechert, of New York, and A. C. McClurg & Co., of Chicago. Altogether 305 members were enrolled, 139 gentlemen and 166 ladies, of whom 91 gentlemen and 130 ladies belonged to the profession of librarians, in the strict sense of the term. Many persons not librarians, but chiefly ladies, listened to the proceedings of the World's Congress, while the A. L. A. conference was apparently attended only by professional people, and that was evidently to the advantage of the conference, as was the selection of the place of meeting.

The international relations of libraries are still insignificant, and it was therefore impossible to prepare a programme for discussion, and distribute subjects among certain professionals. The literary contributions that were sent in obedience to a general call were read in turn. Two foreign contributors to the programme, Cowell, of Liverpool, and Miss James, of London, read their own essays; of the other six foreign papers only the one sent by the editor of *Centralblatt für Bibliothekswesen*, in Leipzig, Dr. O. Hartwig, was submitted; it was translated and read by E. F. L. Gauss.

Hence we see that this World's Congress had an Anglo American character, and the one institution, the predominance of which in number and importance constitutes the chief difference between the German and American system of book collections, the public library—the people's library—was the chief object of consideration. While in the A. L. A. conference the professional librarian spoke to his colleagues, in the World's Congress the representatives of the people's libraries spoke to non-professionals and patrons, and carried on a propaganda.

President Dewey, doubtless the strongest impelling force in the library life of this country, in his opening address summarized the progress made by the public library and its idea, its position in the programme of national culture since the foundation of the A. L. A. He spoke with enthusiasm of the work of his colleagues and with

confidence of the problems of the future and their solution. Crunden pictured the librarian as an executive officer, and defined the requirements the profession of librarian demands. He must unite in himself all the qualities of the business man, the scholar, and the gentleman. Cowell, of Liverpool, spoke of the methods of awakening interest among the various classes of society for public libraries, and urged the use of them. He laid stress upon constantly reminding the public of the library and its available treasures, and suggested that they point out in the press in what particulars the library might be improved. Miss James gave a history and description of the People's Palace and its library, an institution of popular education, situated in the poorest part of London and performing a most beneficent work. Dr. Hirsch, chairman of the board of directors of the public library of Chicago, spoke of the public library and its influence on public education, saying: "The public library furnishes to the elector the means to form his own political opinion; it enables the citizen to educate himself in all directions; it informs him in regard to æsthetics, ethics, or sociology. We are apt to underrate the literature of fiction when considering it merely as a matter of entertainment, for this branch of literature contains works of high rank that open the eyes of man to the life of his own soul; a good novel is always a good teacher of worldly wisdom; and fiction therefore rightfully occupies a large space in our public library."

Mr. Cutter tried to define the character of the American library in a paper on "The standing of the American library." "It is true," he said, "that our libraries are young and small; that we can not as yet use them for profound scientific investigation; that in some of our libraries such investigation can scarcely be begun, and that comparatively modern and cheap books form their chief stock. But we have opened new ways and intend to offer to the public more than is offered in other countries. In our attempts to turn over and over a small stock, to have circulated frequently a small number of books, to place every atom of information and instruction in such a condition that it may be used, we have no superiors. Utilization and diffusion of knowledge are our leading ideas, and the highest mark in our testimonial."

Various circumstances combined to prevent a profound discussion of these papers. The effect will begin when they are published in the *Library Journal*, as is the intention. The congress could not have a direct result in its environments but friends of international library congresses will not be discouraged by the ineffectiveness of this congress. They will doubtless be fructifying if held independently, and will chiefly occupy the attention of the members with the subjects treated by the two German papers read in Chicago: The reciprocal relations of libraries between different countries.

The conference of the A. L. A. concerned itself exclusively with American libraries, and strictly followed the programme prepared beforehand. In attempting to indicate in a few words the essential difference between American and German libraries, it is necessary to remember the fact that the entire American system of education is different from the German.

The German university, as an institution for scientific investigation, has no equal in America, except the post-graduate courses following a four years' college course, and found in only a few institutions of importance, such as Johns Hopkins University, in Baltimore, Md., and Harvard University, in Cambridge, Mass. Generally colleges and universities confine themselves to transmitting knowledge, hence are only upper grades of secondary schools, which, in turn, are continuations of the elementary or public schools. Similar to this plan is the organization of libraries. Though they collect, for university professors and future generations of scholars, strictly scientific works (one need only remind us of the purchase of the libraries of Rauke, Zarneke and Lagarde), they bestow much more attention on text-books which make the prescribed knowledge accessible to the students. That it is not their plan to furnish the students with material for scientific research is proven by the rule that



no student may borrow more than three volumes at one time. The public library, as Mr. Cutter during the proceedings of the conference occasionally remarked, runs parallel with the lower grades of education offered in kindergarten, elementary, and secondary schools. Another essential difference between the American and German libraries is that public libraries are more numerous and more effective, because they consider it one of their duties to attract the public to their rooms by all available methods, and, one is tempted to say, to urge and force upon the public the intellectual treasures heaped up there. As the institutions of learning are organically connected, one building upon what the other has done, so the difference between a university library and a public library is a comparatively small one in America; the general management of both shows great similarity. The intention to simplify the technical part of the management and to save labor is everywhere shown plainly, and is chiefly explained by the high wages paid for manual labor in America. The relative similarity in the objects in view among the various libraries has facilitated the coming together of librarians, and favored an organization for common labor and cooperation.

The conference had a very comprehensive programme. The large, collective report on "Public libraries in the United States of America," which was published by the Government in 1876 (in the foundation year of the A. L. A.), is to be replaced by a new one, which will exhibit the progress made in seventeen years through the A. L. A., aided by the work of foreign librarians, among which Graesel's "Principles" are considered as occupying a prominent place in the opinions of Americans.<sup>1</sup> The work for this new volume was distributed and the various essays prepared. It was Dewey's plan for the year's conference to discuss and settle the points concerning which practice and views had not come to a definite conclusion. For that purpose the July, or World's Fair, number of the Library Journal, contained brief extracts of these papers, where that in which all agree was separated from that which was still a subject of contention, and this journal was placed in the hands of members present. Hence papers to be read were not on the programme, but only discussions of the themes presented. "We therefore expect," so the programme concluded, "that more will be accomplished in one session than could otherwise be done in three, and we hope to double the practical importance of our meeting by studying the library exhibit."

The proceedings were conducted in the usual forms; the gavel, as a sign of the dignity of the chairman, was alternately in the hands of President Dewey and different former presidents; and to the chairman as the supposed umpire every speaker addressed his words during the discussion. The latter proceeded as smoothly as could be expected in a meeting of experts, with reference to questions chiefly of a practical nature, and in a language that tended to crispness and brevity. I must not neglect to state that the contributions to the discussion on the part of the ladies did not differ in brevity and positiveness from those of the gentlemen. Often the sense of the meeting was found by raising the hands, or by viva voce vote, rarely to decide anything by numbers, but mostly to ascertain whether this, that, or another mode is being practiced and has proven satisfactory.

The proceedings, of which I do not intend to give a full account, but only characteristic features, showed at once in the discussion of the first subject, "Library and school," the almost unlimited liberality of the public library and its efforts to secure for itself a place as an indispensable institution of learning. The question was discussed how to interest the teachers in the library, so that they might encourage the students to make use of it? Experiences were exchanged. In one library the teachers are invited to take part in the meetings of the library clubs; at other places the superintendent of public schools is a member of the library board; one library sends to the teachers collections of books for distribution among their pupils;

<sup>1</sup>Mary S. Cutler says that this is "the most important single publication on library economy since the Bureau of Education's special report."



some give a number of copies of the same book to one class, so that all the pupils may read and discuss it in class; in other cities the librarians from time to time visit the schools and urge upon pupils and teachers the use of the library; two librarians induced students to write essays on the library. The restriction of works of fiction was rejected. Mr. Fletcher spoke most decidedly against any restriction, referring to the paper read by Mr. Hirsch in the Congress of Librarians.

The question whether the public should be allowed access to the bookcases was discussed quite lively, and the advocates of that privilege defended their views with great zeal. "The public will be able to select its own reading matter; tutelage in this country is very unpopular." In Cleveland, Ohio, the circulation rose from 200,000 to 350,000 volumes, or about 60 per cent, after the public had been allowed access to the books. It is true that 300 books, valued at \$300, were lost in one year, but salaries amounting to \$2,000 had been saved. Miss Kelso, of Los Angeles, tells the people that the books belong to them and that the librarian only superintends their collection and distribution. Her experiences go to confirm the beneficial results of the new move. Miss Allan, of Omaha, said that the reading room of the library there contained 8,000 volumes, without supervision, and that during the last year not a single volume was lost. The opponents to free access had in view chiefly libraries of less popular character containing more valuable literary treasures.

A plan, under the title "Book annotation," was submitted, which was equally important for the managers and users of libraries. It is this: A catalogue of about 10,000 of the best works from all departments is contemplated, in which every book title is accompanied by brief characteristic notes from the pen of experts. This catalogue is to aid the librarian in the selection of books to be bought, and the reader in that of books to be read. The costs of this enterprise are estimated at \$100,000, and it was proposed to raise this sum by a subscription on the part of all institutions interested in it. Dewey and others valued the saving of labor in the various libraries, and the value of protection from purchase of worthless books, much more than the estimated cost. If the German reader will kindly remember that American book dealers and publishers do not send to the libraries copies of new books for examination, he will properly gauge the importance of such a guide.

An attempt in this direction is made in preparing a catalogue for a model library of 5,000 volumes which form a part of the A. L. A. library exhibit. The selection of these books is the result of suggestions of more than a hundred librarians. The catalogue of this model library contains the titles without notes. Four little pamphlets have been prepared called *New Aids for Readers*, containing a small selection of the best works on electricity, photography, American politics, and political economy, with notes characterizing their importance.

In connection with this subject Mr. G. Hies, of New York, announced that at the beginning of 1894 a weekly index of magazine articles would appear which would repeat the weekly statements with additions, until at the close of the term it would offer a summary. This enterprise is made possible through the linotype machine (Mergenthaler's typesetting machine) that casts each line separately, so that the matter in type can be rearranged and used continually in every following number,<sup>1</sup> at a merely nominal price. With reference to the "adaptation of the library to its readers," Mr. Green, of Worcester, Mass., made some noticeable suggestions, but found strong opposition. He considered it advisable not to let libraries in small places grow beyond a certain limit; to dispose of dispensable books by assigning them to the next larger library, or by selling them, and rather make a small number of books useful by frequent reissue, and new editions of catalogues. He proposed

<sup>1</sup>The Rudolph Indexer Company (Nation, August 31, 1893) plans the reprinting of the titles of all new works published in America. This list can be had with any new work purchased. The same is intended for books printed previous to 1893. In this list every book title is to be accompanied by notes with references to the subject, index, and signatures according to Dewey's decimal and Cutter's expansive system, and may be utilized for the card catalogue as well as for the Rudolph Indexer (a newly invented form of catalogue).

to this end a division of labor among the libraries, i. e., according to a well matured, comprehensive plan; each library should select a special branch of literature, and aim at a complete representation of works in that branch.

Concerning the topic "Fire, security, and insurance," Mr. R. B. Pool, of New York, reported that bricks had been found to be the best fireproof material; granite crumbled in fire if water was poured over it, and iron could be considered safe only if surrounded by brick. He thought it impracticable to insure libraries. The community that owns the library is the best insurance company. The case was different with libraries established by means of private funds. Miss Allan, of Omaha, stated that she insured books for the time they were in the hands of the bookbinder, and the card catalogue of her library is insured to the amount of \$5,000.

The utility of "Branch libraries and delivering" was then discussed. That practice plays an important rôle in American cities which cover such great areas. There was unanimity concerning the value of branch reading rooms, but branch libraries would not pay, for the cost of these branch buildings might be better used to increase the stock of books in the central library, and by rapid delivery to all parts of the city the library could be made more useful. Messrs. Fletcher and Green had a high opinion of the educative influence of branch libraries upon their environments. Minneapolis and Chicago had both met with success by following a mixed system.

In the discussion of the next topic, "General management," specific American conditions were presupposed: The trustees and the librarian's relation to them; whether he is to be the secretary of the board; whether he is to manage the funds of the library, and to that end give bond; his term of office—that is, whether he is to be appointed for a number of years, or may retain his position during good behavior, as was the sense of the majority. The question of salary caused a lively debate; it was found that many librarians and assistants had a lower salary than principals in public schools. It was claimed that the salary should be at least equal to that of a school principal; a secondary education should be a requirement of admission to library service.

Mr. Dewey here led the debate upon a higher point of view. "In our days a new kind of higher education has developed, whose foundation is the library. I mean the so-called university extension. It offers instruction for all conditions of life; for the home, for people whose time is occupied by business, for young and old, and the library is the fountain head of this new education. \* \* \* We see the library in a constant process of development. The idea of ancient times, when the reader had to storm a library like a fortress, has turned into the opposite. The librarian of to-day is aggressive; he wants to turn over his stock of books as fast as the merchant his stock of trade. \* \* \* Let us say it openly that we are doing a great work and may demand recognition accordingly." Mr. Crunden compared the position of the librarian with that of the president of a university, and required for the head of a library similar qualifications. Mr. Dewey seconded this by referring to Justin Winsor, the head of the library at Harvard, who is not second to the president of any American university.

The discussion of the best mode of "buying books," in which the booksellers present took part, presupposed conditions very different from those prevailing in Germany. In regard to purchasing foreign books, Mr. Brett, of Cleveland, Ohio, remarked that at one time he had to order a large number of German books, and he had divided the order between a New York importer and a German firm. The prices had been almost alike, but the New York agent had been much more prompt in supplying the books.

Mr. Dewey reported that for the purpose of utilizing duplicates, he had arranged a sort of clearing house in the State library at Albany, which is used by all the libraries of the State of New York. They send unnecessary books to this clearing house, where they are estimated by an official of the State library, and may then select from the collection of duplicates books of an equal value in money. We



also say to the officials of small libraries: "If you will send us with your duplicates a list of what you have, we can select from our stock of duplicates those which will best complete your library."

The subject of "Juvenile literature" brought up the question whether books for children should be placed in a separate room, or among the other books according to their contents, only marked conspicuously with a "J" (juvenile books) on the back and in the catalogue. In connection with this the other question was discussed, whether the library should assume control of the reading of minors, and restrict them to the reading of juvenile books. A vote proved that in 12 of the libraries represented the juvenile literature was placed separately; in 24 it was not. Further discussion revealed the fact that the different librarians adhered to the mode each had adopted, convinced that his was preferable.

A discussion of the subject "Reference books" revealed the fact that most librarians are accustomed to put dummies in the place of such works if they are taken from the shelf to be used in the reading room. These dummies are wooden blocks in book form, on the back of which a note is made stating the present location of the book. The query whether the dummies are used in place of all books taken out, as is done in the British Museum, was negatived unanimously.

"Pamphlets" was a subject that gave rise to a discussion of its definition. While about one-half of those present designated an unbound publication of less than 100 pages as a pamphlet, the others called every unbound book a pamphlet. It seems that the question was not clearly defined, What shall be considered a pamphlet from a bibliographical and statistical point of view? And from the other consideration, What shall be bound and catalogued? In the Harvard University library pamphlets kept in cases are designated as such by cards stating: "a collection of pamphlets on this subject still uncatalogued; see case so and so." A similar practice is found in Columbia College, New York.

The subject of cataloguing gave rise to the question whether the days of "subject catalogue" were not numbered; whether in future it would not be better to give the readers printed bibliographies in which books to be found in the library are marked. It was the general opinion that the patrons of a library were more desirous to know what could be had on a certain subject than what existed. "In a public library not one in a hundred readers intends to exhaust a subject; they want to read something on it." The question as to whether the subject or the author catalogue should give the title most accurately with regard to bibliography, was decided in favor of the author catalogue after Lane's convincing argument. The majority thought it not necessary to find out and completely state the given names of foreign authors, but it was considered advisable to supplement in the card catalogue each subject card by an information card containing biographical statements concerning the author. On this card the given names might be accurately stated.

The topic "Classification" was excellently treated in a paper by Horace Kephart, of St. Louis. Unfortunately, this paper was not discussed. He called attention to the fact that classification and notation, or system of division and system of signature, are two very different things; that one might have a very detailed classification, and yet very simple signatures. The criticism contained in this was directed against the two systems extensively used in America, Dewey's decimal and Cutter's expansive system. In these systems each subdivision is expressed by a new element in the signature. The consequence is that the signatures become as complicated as the Americans formerly and erroneously attributed them to the university library of Halle. Moreover, the classification of books is enslaved by such notation, as Kephart properly termed it.

Kephart's contribution to the programme was one of the few papers which remained undiscussed for reasons unknown. The remainder of the programme was completed.

The report of the cooperation committee gave a history of its work. It was constituted in 1876, and has endeavored to inform the members of every improved



library method or practice, and to place improvements at their disposal. It had, among other things, discussed and examined the various kinds of bookbinding; had formulated tables of comparative library statistics; recommended uniform blanks and cards, the dimensions of which are divisible uniformly; and had finally established a supply department, in order to have everything belonging to a library equipment manufactured and furnished. In course of time this department has become an independent firm, the Library Bureau, in Boston, with branch offices in Chicago and New York. This bureau still stands under the influence of the association. An illustrated catalogue of 176 pages, 8<sup>o</sup>, shows the extent of its business, which, from a paper pad to the writing desk, embraces everything a library needs.

The committee also pays special attention to cooperative catalogue work. This work has assumed such importance that in 1886 a special section, the publishing section, was established. It caused a new edition of Poole's Index to Periodicals up to 1881 to be published, and supplemented it up to 1891. The whole work contains now about 300,000 references in about 2,400 pages of two columns each. The section has also made a subject index, called the A. L. A. Index, for collected essays, monographs, and books of miscellaneous character. Both works are continued together under the name of Annual Literary Index. Furthermore, it has published a list of the best juvenile literature and accompanied it by notes. This work was prepared by J. S. Sargent. By cooperation with a large number of professional librarians, the A. L. A. catalogue has been prepared by Miss Mary S. Cutler. This is a list of books contained in a model library of 5,000 works selected from all branches of literature. This catalogue contains the titles in systematic order, according to Dewey's and Cutler's systems, and with both signatures. It contains an author's as well as a subject catalogue. This work has been printed and distributed by the Federal Government in thousands of copies.

The public document committee reported its work, and Mr. Dewey read three letters of Senator Allen, who fathers a bill in Congress which provides "that all Government publications shall be regularly sent to all the libraries designated by the Government, and that the latter shall cause a subject index to be made of all previous publications, with annual supplements." A resolution, in which the A. L. A. petitioned Congress to pass the bill, was adopted.

A new proposition made by the committee on cooperation to the association had reference to foreign governmental publications. It was found desirable that a number of libraries should try to obtain the official publications of Germany, France, and other European States. It was presupposed that the European libraries were also desirous to obtain American literature of that character. It was taken for granted that the Federal Government could arrange for an international exchange, for which a suitable organ existed in the Smithsonian Institution. The commission was authorized to pursue the matter further.

Another committee had had the duty to inspect the library school of the State of New York, in Albany, conducted by Melvil Dewey. The members of this committee reported upon the work of the school, which, during the last year, had consisted chiefly in the preparation and cataloguing of the A. L. A. library exhibit. The committee mentioned a branch of study of specially practical value, which branch had recently been introduced, to wit: Instruction in composing and reading proof of catalogues and other printed matter. The committee expressed high appreciation of the work of the school.

Another report was read by the committee on index to subject headings. In order to decrease the work of each cataloguer, a model index of all possible catchwords, indicating the best catchwords to be used as subheadings, and specially for subjects, the literature of which is very extensive, was submitted. A sample list was recommended for the literature of any country, containing 25 subheads: Antiquities, army, bibliography, biography, etc. Mr. Lane thought it impossible to furnish a complete list of all existing subheads. The subheads in the subject catalogue of

the model library of 5,000 volumes was only a drop in the bucket, and Mr. Brett thought a beginner in this kind of work might make use of the subheads in the catalogue of the Boston Athenæum. It was resolved, however, to continue the work of the committee.

Simultaneous with the meeting of the A. L. A., certain sections held meetings; thus, the State Library Association, consisting of the officers of State libraries, and the College Library Section, consisting of the librarians of colleges and universities. In this latter section Lane reported that the exchange of Harvard University with other libraries had increased to such an extent that special blanks had to be printed. The writer of this report attended this meeting, and since the question under discussion was, "How to accustom the student to use the library successfully," the question was asked how that was done in Germany, and whether it was true that books ordered could be had only after the expiration of several hours? When the fact was confirmed it was, and remained, the subject of undisguised astonishment.

The sessions took place in the forenoons between 9 and 1; the afternoons were used to see objects of interest mentioned on the programme. On one day the library of the Armour Institute was visited. This institute is a technical school founded by Mr. Armour. The librarian, Miss Catherine L. Sharp, had made arrangements for a library training class. Another day the Woman's Library was visited, which contains a great collection of works written or translated by women. This library was found in the Woman's Palace. Another day the German book publishing trade exhibit was visited. This exhibit was found in the German Building in Jackson Park. Another day was consumed in inspecting the French and the German university library exhibits.

For the latter exhibit a special invitation had been sent out. If one considers what powerful attractions the treasures of the World's Exposition exerted upon people who had spent a year in professional work in libraries, it must be esteemed of great importance that so large a number of librarians gathered together in the room in which the German libraries exhibited their organization and management. Here were seen and examined with interest the bibliographical publications, annual book lists, title indexes, lists of periodicals, different kinds and forms of catalogues, blanks and methods for using them, and the librarians seemed to be impressed with the fact that in Germany the technique or the practical side of library work was highly appreciated.

How much America values the scientific side of the work is seen from the fact that the systematic catalogue of the University Library of Halle has been imitated in newly arranging the large American libraries of Yale College and the Sutro Library of San Francisco.

The proceedings of the conference were closed on the 22d of July with an earnest address by the outgoing president, Mr. Dewey, who urged upon the members to work for the noble cause, and to devote themselves to their profession with their whole soul, saying: "I am proud that in the midst of the greatest collection of exhibits the world has ever seen we have proved our vital interest in the work of our lives by so splendid a series of meetings as we have held."

In Germany also the plan of an organization of librarians, with regular conferences, has been considered, but objections of various kinds have prevented the execution of that plan. Whether now, after our profession has assumed a more independent aspect, the time has come to mature the plan, may be decided by others; at any rate, he who has followed the work of the American colleagues since the foundation of the A. L. A., and has witnessed the interesting labors of this year's conference, as well as its exhibition, can not but express the desire that the *Centralblatt für Bibliothekswesen* may not close its first decade before it has published a report of proceedings of a G. L. A. (German Librarian Association).





## CHAPTER IV.

### FRENCH VIEWS UPON AMERICAN EDUCATION AND THE EDUCATIONAL EXHIBITS.

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The following accounts of the Exposition are from the pen of M. Jules Steeg, director of the Musée Pédagogique (Paris), who was commissioned by the French minister of public instruction to superintend the installation of the French educational exhibit. The matter was comprised in two articles, published originally in the *Revue Pédagogique*. The first appeared before the Exposition was opened, i. e., June, 1893; the second, in the following July.

The Exposition only occupies a point in this vast city, and yet it is of gigantic dimensions. There was full cloth to cut from, and it was cut freely. The plan called for large and numerous buildings separated by great spaces. Except the proportions, which really are immense, it is a copy of our exposition of 1889. Our hall of machinery (but here the inner iron braces are clumsy and disgraceful) was the model for the central palace, which is called the Manufactures and Liberal Arts Building. This is, to speak properly, the Exposition itself. Here it is that all industries are represented. The four sections of the center are occupied by Germany, England, the United States, and France. Germany has made great effort, and the division is very attractive, but the interior does not correspond to the external promises. France, on the contrary, has sent an abundance of its choice products, stuffs, silks, furnitures, bronzes, and so on, which will maintain its ancient fame. The palace of the fine arts, where we occupy, without doubt, the first place, is a beautiful construction. The buildings for electricity, mines, agriculture, horticulture, fisheries, and some others, all immense, form a remarkable whole, in which the coarse details are lost. If by chance the sun shines from a blue sky, which is reflected in the lakes where Venetian gondolas and electric barks are running, and illuminates these palaces and domes, these cathedrals, these glass and gilded roofs, this verdure just showing itself at the tip of the branches, the effect is really grand, and "the World's Fair," as it is called by the Americans, merits perhaps better, another name which they bestow upon it sometimes, and which I prefer, "the White City."

But as to the educational exposition? If I have not said anything about it, it is because it is not yet finished. In fact, the greater part of installations are still in a disordered state. When this article appears in the "*Revue*" the Exposition will be at its height; at present, the latter part of May, it is in the hands of the plasterers, carpenters, upholsterers, glaziers, unpackers. The glass cases of the exposition of the department of public instruction are not yet ready. \* \* \* The American section occupies considerable space, a whole wing of the first story of the hall of manufactories. Every State, every Territory, without counting particular institutions, has reserved to itself a series of alcoves. It is necessary to make a veritable journey in order to examine somewhat particularly this abundance, this mass of documents which are here accumulated. As far as I have been able to discern in looking over that which is unpacked and put in place there will be a certain resemblance and repetition in this profusion of materials. The schools of the most widely separated States resemble one another like sisters; the methods (if there are any),

the distribution of studies, the results, the copy books, exercises, subjects, all seem to have been cast in the same mold. An attractive feature will be the photographs; everything is photographed, the buildings, scholars, exercises of all sorts, classes in reading, writing, drawing, recitation, physical and chemical experiments, libraries and halls for gymnastics; every State, every school has its photographs in great plates, which adorn the walls of the alcoves—without counting pictures in swinging frames and innumerable albums on the desks and the tables. In time the examination becomes tiresome, and it is only instructive as showing the great similarity of all the schools, all the classes, and all the exercises.

The only State whose exposition is now ready is one of the New England States, Massachusetts. The superintendent of the schools of Malden, Mr. Gay, principal of a high school, has been charged by his State government to organize this exposition, and he has kindly done the honors of it for me. I looked with interest through the exercise books of the scholars from the first school year until the ninth. These have been made with reference to the Exposition, but according to the customary habits and methods. There is a school in which all exercises are written with lead pencil, at least for several years, and they have been written in the same way for Chicago. It does not seem to me that the Massachusetts scholars do better work than ours at the same age; they write more legibly in very big characters and retain this habit until the end; they do less dictation, and they seem to me less advanced in arithmetic. For some years particular care has been given to drawing, which was formerly neglected or even unknown. It became by degrees optional and at last obligatory. Three orders of exercises are followed which aim at a special end—exercises with straight lines, which tend to mechanical and industrial drawing; exercises with curved lines, which prepare for ornamentation, and exercises in copying and coloring, which lead to artistic drawing and painting. The series of these three exercises seemed to me very interesting and worthy of examination.

Three years in the primary class grade, four or five in the grammar, lead to the high school, which is apparently better known and more largely attended than in our country.

What surprised me most at first was the great number of women teachers. All the photographs give evidence of this also; I have not seen a single master, only women teachers. There are, however, some masters. Of 363,935 persons teaching in the United States, 125,602 are men and 238,333 women. The men as a rule only enter upon the work with the view of leaving it as soon as they find a position which is more lucrative; the women remain until they marry. The greatest number of the scholars of the normal schools are young ladies; some young men are also following the courses, but more usually they simply have an academic training.

The position occupied by women in public life is considerable and surprises a European. There is for instance in New York a medical college for women, and nothing is more curious than to see these ladies assembled in a lecture hall wearing black dresses with the doctors' square hat on their heads.

At this moment there is a women's congress here. It is the one, I believe, which opens the series of the great congresses of the Exposition. It has already been in session two days, and proceeds with the perfect regularity of a parliament. Fifteen hundred ladies, regularly delegated by the women of their States or by some association, besides delegates of foreign nations, are united in general congregation and in sections, with presidents, vice-presidents, secretaries, and orators. I am told that very interesting reports have been read, eloquent discourses delivered. All subjects are treated: The moral influence of women, education, the school, religion, fashions, dress, political rights, the progress accomplished by women in the sciences, physics, medicine, law, etc. One State, Wyoming, has already granted to women electoral and political rights, and Kansas is moving to this end.

In America the girls and boys are educated together. They sit on the same benches, pursue the same lessons and the same exercises without any distinction whatever;



for the boys even take part in the sewing exercises, and are very proud to exhibit their needlework every year beside that of their female companions. They would be astonished, I was told, if anyone seemed surprised at this. I refer here to the first school years. Later some separation takes place in spite of all the theories in the world.

The manual training and the maternal (infant) schools—which are called here by the German name *kindergarten*—as well as regular instruction in drawing, are innovations in American pedagogies. In 1880 there were in the United States 232 kindergartens, with 524 teachers and 8,871 pupils. Ten years afterwards there were 521, with 1,202 teachers and 31,221 pupils. The Americans seem to me to be much interested in this institution, as if it were one of the things which they have discovered and of which they are very proud. This movement will grow, at least in the populous cities where these little schools can render great service.

As is well known there is not in America a department of public instruction, nor a central authority of any kind that controls the schools. They are solely the charge of local districts (communes), subject only to the laws of the particular State which regulates the tax for the support of the schools and maintains a certain supervision or inspection over them. The only central institution which takes cognizance of public instruction is the Bureau of Education located at Washington, and under the Department of the Interior. This Bureau comprises four divisions, which employ altogether 42 persons. The first division is that of correspondence, the second that of American statistics, the third of international statistics; the fourth constitutes a pedagogic library, analogous to that of our museum, but of less importance.

A fifth division is occupied in establishing schools in Alaska. Churches of every denomination had already opened some schools near their missions; several had even established boarding schools, very necessary in these regions, which are so vast and uninhabitable during winter.

This year the Bureau maintains in Alaska 15 public schools, with 20 teachers and 872 pupils, and it aids 14 denominational schools, which receive 1,069 scholars. This is still too little, as it is estimated that there are 8,000 children of school age. Under this polar ice civilization advances. I have seen a paper of Alaska, the *Star of the North*; I have seen the photographs of the school of the little Eskimos; I have read, with very heartfelt and sincere interest, their school exercises, their written pages, which are very neat and correct, their problems, narrations, little naive letters written by the small boys and girls of Karluk, Unga, Ufognac, Kadiak, Hoonak, Kilisnoo, Hydae, Anvik, etc. Look out on the map these forlorn points, where we have brothers, where little children walk joyfully to school, where women of heart devote themselves to the sweet and difficult task of educating them well. Little Petraska, of Anvik, writes the 9th of January: "Yesterday it was cold; to-day it is not cold; sometimes it gets very cold, and men die. In summer sometimes men sleep in canoes." All thoughts of this little one turn on the thermometer.

The Americans, people of business and money, are at the same time fond of schools, some from custom and impulse, others from humanity; the wise from patriotism and forethought. From the icy regions of Alaska to the luxuriance of Florida the school takes a place of honor in the regard of the citizens. The innumerable halls which they have given to their school exposition among the buildings of the World's Fair are a proof of that. Perhaps we shall have some interesting things to show to them; at any rate, we shall have many things to see and to gather from them which will be of interest in the education of future generations.

#### [SECOND ARTICLE.]

The exposition of the department of public instruction and of the schools under other departments was officially opened the 10th of June. Invitations had been addressed to the delegates of the foreign Governments and of the American States, to the school authorities, to the teachers of the city, and to the press. Very many came,



especially ladies. We offered, according to the custom here, champagne, cakes, and flowers at the same time that we did the honors of our collections, of our written exercises, and of our books.

The school exposition of France, which seemed at the beginning destined to be crowded within the most limited space, succeeded in securing considerable extension, and it is certainly one of the most important, the richest in documents, and the most substantial. It seems to produce an excellent impression upon the numerous visitors who pass through. They say so, at least, in running over our albums and in asking us with much curiosity about our organization, which is so different from theirs.

At the entrance of our alcove is a large and well lighted vestibule, which at the last moment was kindly granted to us by the American administration. It is ornamented with plaster models for the use of our normal schools and our lycées. On the first panel are shown drawings of the scholars of the normal schools and very beautiful photographs of the schools of Lille and Roubaix; in the center a maternal school, upon the blackboard of which the teacher has written in big letters: "The little Lillois salute their friends in Chicago." The two pillars at the entrance are decorated with geographical maps; upon our eight panels (there were only two in the beginning) are specimens of manual work (wood, iron, modeling), specimens of our pictorial charts, mural maps, pictures used in object teaching, in natural history, etc., musical notation, drawings, statistics, and even stenography. A beautiful panel of water colors from the school in Ganneron street occupies a large space between two windows. In the high show cases of our principal hall are displayed: First, the publications of learned societies, books belonging to public libraries, scientific publications. Second, the doctors' theses of the different faculties and the documents of superior instruction. Third, the books, methods, programmes, tabular views of secondary instruction, the best compositions offered last year at the competitive exercises of the lycées for girls, the compositions of last year for the several examinations (baccalaureates, licenses, certificates of aptitude, "agrégations"). This is the part that most surprises observing visitors, because it does not correspond to anything in their own collections. Our secondary instruction is an organization unknown in America. Fourth, the publications of the pedagogical museum, monographs and documents, principal pedagogical works published in France from Fenelon and Rousseau to MM. Compayré, Marion, Pécaut and others, the "Revue Pédagogique," etc. Fifth, the principal books used in our superior primary schools collected from all classical libraries of Paris. Sixth, specimens of the works which constitute the most of our school libraries (this institution seems much appreciated). Seventh, our schools for boys, exercise books, drawings, photographs. Eighth, the same from our schools for girls. Ninth, the same from our superior primary schools. Tenth, our normal schools, programmes, works of scholars, exercise books, compositions, drawings, photographs. Eleventh, works of teachers, books, lectures, reports of inspection, methods of teaching, agriculture, music, gymnastics. Twelfth, specimens of apparatus used in our superior primary and normal schools for instruction in sciences, physics, chemistry, natural history, including an electric machine, a pneumatic machine, and even a steam engine for demonstrations; finally the school materials for writing and drawing, models of school furniture, etc.

A fine, large, low glass case we had the good fortune to obtain from the Woman's Building. This we have placed in full view along the lake side. It is 11 meters long, and enables us to exhibit the whole series of our manual works, beginning with the cut paper and the little knitting of our maternal schools up to the sewing, embroideries, garments, lacework, and flowers from the great schools of Lyons, Bordeaux, Le Puy, Nice, Toulon, etc., and also a certain number of works by boys, which could not be placed upon the panels—carpentry specimens, ironworks, modeling, and geometric figures.

Three long tables, placed in the midst of our hall, and a desk, adjoining the glass cases, are loaded with albums and with cartoons of drawings, sewing, photographs,

school plans, etc. I was ashamed at first of our poverty; to-day I am overwhelmed by our abundance. In proportion as the boxes were unpacked and the objects were put one after the other in their places, I was struck with the richness, variety, originality, and interest of our exhibit. I did not find anything equal to it in the other exhibits.

Four adjoining halls contain the expositions of the Central School, the School of Mines, the schools of arts and trades at Aix and Chalons, with enormous cases of work in iron, complicated machines, which people stop to examine; schools for watch-making in Besançon and Cluses, where the works are always in action, attract the eye; commercial schools of Paris and of Bordeaux, which are highly appreciated by the commercial classes; the Society of Franklin, the polytechnical and philotechnical associations. The works of the pupils of these institutions—the methods, flowers, drawings, and porcelains—form a charming panel. The maps of the topographical service of the ministry of war—central France, the Alps and Pyrenees, Tunis, and others, in black, in colors, in relief, really fine—are admired by connoisseurs, and a German professor confessed to me the other day that he never had seen anything so perfect. This entire collection is proof of great effort and of indisputable progress. Our exhibit is evidence that we have not wasted our time, and if there remains much to be done in the field of instruction, we have the satisfactory conviction that much has been accomplished already.

The French exposition in general is a great success. The ground floor is devoted to our industries. The good taste of the show cases, the magnificence of the toilets displayed, the silk dresses of all colors and styles, lavish embroideries, magnificent furniture, rich stuffs, furs, porcelains, artistic bronzes, excite admiration. Every minute one hears the women exclaim: "I have never seen such a thing in my life!" It is true that this is an expression very common here.

Our school exhibit can not pretend to such popularity and does not provoke these comments of the passers by. It is severe; its principal treasures are of modest appearance; the mine must be dug to discover the nuggets. But when a man or a woman, engaged in school work, lingers there, hears the explanations, examines for himself the series of our exercises, he becomes deeply interested. The school monograph of a French youth, his monthly exercise books, his compositions, his drawings, his certificates of studies, his books, the monograph of a pupil of the normal school, the monograph of a school in its different courses, the rolled copy books, the programmes, the time-table, form a whole very clear and thoroughly honest. A brief visit is really sufficient for a sort of general inspection; for we put before the eyes the actual reports of inspectors of primary schools, of academic inspectors, and of principals of schools. Nothing is concealed; nothing is gotten up for the occasion. The real life of our schools develops itself before the eyes.

Manual work begins to engage attention in this country; it has been organized in certain schools; here and there special schools for the same have been established preparatory to apprenticeship or to technical schools. The specimens which we have brought excite great interest. They do not differ much from the work executed in the American schools; we have perhaps more method, more connection in the series of works. I speak of the boys' work, which proceeds here too often by fits and starts. Our needlework seems generally superior to that of the American schools; it is true that we have brought the upper part of the basket, and that here little time is devoted to this kind of work.

The American exposition of schools is very large and much scattered; under the circumstances it is very monotonous, as all of the forty-four States of the Union exhibit their schools and their universities, and several of them, the most important, upon a large scale. Immense spaces are covered by the exhibits of the universities or colleges. These include apparatus of physical laboratories, collections of mineralogy, botany, and zoology. These collections consist generally of large objects, which appear more appropriate for popular than for scientific instruc-



tion; for example, parts of the human skeleton, which resemble the remains of mammoths, a colossal skull, gigantic tibias. The same is the case with the botanical specimens. This part of the exposition appears to me childish, and does not show a high degree of knowledge on the part of the young men for whom it is intended. With the exception of some universities which are well known, higher education is indeed weak enough. Few here have time to devote themselves to deep studies, to lengthy and uninteresting works which science necessarily imposes; everyone is in haste for results, for practice, for immediate application.

Primary instruction is divided here into several categories. The primary school properly called, extends from the sixth to the tenth year of age, the grammar school from the tenth to the fourteenth, the secondary school from the fourteenth to the eighteenth year. There are many intelligent and industrious children who pass more rapidly through the different degrees. The exhibits of these schools consist of written exercises and drawings. The former do not include a series of books by the same pupils. The use of the exercise book is indeed almost unknown. For every exercise white sheets of paper are distributed, and on this the scholar inscribes his name and writes rapidly the given work. These sheets united and bound according to classes constitute the universal and invariable basis of the American school exposition. They correspond to our monthly exercise books in that they give the physiognomy of a class but for one day only and for a single subject. These exercises are generally very short and consist of a few lines, written large and rapidly. They do not show effort, struggle for improvement, hard work; no spot nor erasure, this is avoided. I looked over only a few, those of the younger pupils and those of the most advanced. I did not discover in them what I expected, what I thought to be the distinctive mark of this country, even though it might be faulty. For the most part what meets the eye is uniformity.

I understand very well the reason for this. I have visited a good number of public schools in this immense agglomeration called Chicago, which increases immeasurably from year to year by an incessant tide of immigration. Half of the population are Germans; there are 70,000 Scandinavians, many Italians, Russians, Canadians, etc. Their children who come to school do not understand English, they are foreigners. It is necessary to transform them during the school years and make good Americans of them. This has been accomplished with surprising success. After a few years spent in this crucible they are cast, formed, coming out of the same mold they bear the same stamp, have the same language, the same handwriting, the same habit of mind, have read the same books, sung the same songs, made the same movements; what one sees, the other sees also; girls, boys, they are "American citizens;" this is the word which is used and which is repeated to them every minute, and of which they are taught rightly enough to be proud. If this uniformity is necessary, if it is a necessity of the public welfare in a State like this, which is in constant process of formation, it is so in all new or developing States, and in a greater or less degree this is the condition of every State in the Union.

One of the most significant exercises in this respect which I have witnessed in the schools of Chicago, but which must be generally practiced, if I may judge from the photographs of different States, is the salute to the flag. Every pupil has two little flags, tricolored with white stars upon blue ground; at a signal of the mistress all rise and imitate her movements. They carry the two flags to their hearts, above their heads, around their necks; they make many graceful movements with them, extending them forward, backward, upward and downward, with a rhythmical, monotonous song. It is indeed strange to see these great boys and girls going gravely through this exercise, in which every movement is identified with the national banner. The ceremony is finished by a patriotic song.

It is rather difficult to comprehend the whole school exposition, because outside of the halls of the Manufactures Building every State has its individual building, in which the exhibition of its special products and of its schools is found. There



are expositions of schools in the Women's Building and in the Children's Building. This latter is very unique. It comprises all kinds of toys, from rattles to the most complicated playthings, Christmas trees, pictures, etc.; a library, very incomplete, however; works on infant pedagogics in different languages; a great hall for gymnastics with equipments, a part of which has been recently rejected in France, ring, trapezes, fixed bars, horses, ladders, ropes, etc. Every day a class comes there to exercise under the direction of a teacher for the entertainment of the public. There is also a model nursery with all furniture, beds, cradles, the most perfect perambulators; children are brought here and are taken in charge for 25 cents a day, in order to show to spectators the working of the institution. You find here a model asylum, in which a dozen babies, all clean and nice, can be seen through the windows, where the public crowds to watch them playing, singing, moving around, listening to the tales of the mistress. Here are piano, playthings, the whole Froebelianum; nothing is wanting. There is also a class for cooking to be seen through the windows; and through other windows a class for sloyd or working in wood and modeling in clay. This I was permitted to visit. Here three days in a week one class of boys and girls, and the other days another class work under the direction of a teacher and under the eyes of the public; in the forenoon they work in wood, in the afternoon in clay. All this is very interesting, but a little too much advertised and placarded for our ideas.

I have been more interested in looking at the actual school life than at its exhibitions. I was present at the class exercises, especially those of a normal school. The Cook County School in the south of Chicago consists of a large public school with 400 pupils, divided into eight grades and in sixteen classes, with which is combined a normal school—for this, I believe, is the way to regard it. One hundred and fifty student-teachers, of whom 20 are young men (the others are young women), follow the courses, which are not intended to teach them sciences, but to show them how to apply the instruction to schools. The course is one or two years. Each day from half past 1 until half past 2 is devoted to practical exercises. This is the only time that the two schools come together, although all the courses take place in different stories in the same building. The primary school is then divided into groups of 10 pupils, and over each is placed a normal student; the other students of the normal school seat themselves at the tables of the children, become pupils, take part in the exercises, raise their hands when the teacher asks a question, and sometimes answer. When the hour is over, things resume their ordinary course. The normal students who have assisted at the lesson make their notes, which they deliver to the director. If he finds the observations just, he makes use of them in the criticism of the lesson, which is made privately to the student who conducted it. There is no public criticism.

Colonel Parker (of the family of the celebrated Theodore Parker, of Boston), principal of the establishment, is a distinguished original character, who has made his own school a model school; he tries with laudable zeal, and not without success, to develop in the children spontaneity and the passion for investigation and observation. From the first school year he gives great prominence to drawing from nature, or rather to painting; he puts into the hands of the little ones pencils, colors, a glass of water, places them in front of a tree, a flower, and leaves them to make an effort. I have seen among these water colors some very charming "impressions." He gives great attention to physical geography, the study of the surface of the earth, and of relief forms. He has exercises in this subject which are really curious and instructive.

Whatever the Americans may say against our system of emulation, they do not entirely disregard it. I have assisted in a distribution of prizes. It was the closing exercises of the graduating class of a superior primary (high school). It is called here a "commencement," but in most cases it is the end of school life, and at the same time, as they say here, the beginning of the school of life. We were in a church, which had been offered for this purpose, the school of Hyde Park, as an

exceptional case, not having an assembly hall. The church was decorated with flowers. Ninety young men, of whom 20 were boys in jackets, all with flowers in their buttonholes, the rest young women, in very fine white dresses, defiled slowly before our eyes to the sound of the organ, and took their seats on the stage. The president of the young University of Chicago (it has existed only one year) read a discourse on the necessity of earnestness for American citizens who are entering into life. He explained that he meant by this "sincerity, courage, energy, perseverance." The director made an impressive address to his pupils who were about to leave him, and he bestowed upon some of them medals of gold or silver, given by rich persons (among them the chief editor of a paper), rewards for the best essays upon civic instruction. Two young women and one young man were especially praised. For the young man the director predicted the highest destiny, even in the distant future the chair of the President of the Republic. Then two of the pupils addressed us; one, a graceful young lady, had chosen for her subject, "The men of genius." She explained what she understood by genius, what it is, what it is not, how it is favored by circumstances, but not created by the same. Then she finished with an eloquent valedictory to her school. The other, a boy of 17 years, entertained us with a dissertation on "Originality," of what it consists, its relations to "precedents," what it takes from them of better or of worse. We are told over and over about what our fathers have done; this is good, provided we do not confine ourselves to it; in truth there was only one man of absolute originality, i. e., Adam; as to us, we must be what our nature demands. This young man finished his speech also with a valedictory to the school. "Our promotion," he said, "is really original, and instead of mourning over our departure let us rejoice like mariners whose sails are swollen by the wind, to travel boldly over the vast oceans."

This young man had an easy delivery and a pleasing accent; his gestures were graceful, and he was a great success. A teacher presented him a lyre of roses. He was besides the poet of the occasion; before the close the class sang a song composed by him (prosaic enough). In addition there was instrumental and choral music; then the solemn and silent distribution of the diplomas. These young men and women go from here, some to colleges, others to universities, others into offices and business.

All this is not a part of the exposition, but it is a living commentary upon it. It is, indeed, by its actual operations that school life is to be understood. On the occasion of these departures, or "commencements," the pupils of the different schools compose discourses, dissertations upon subjects which they have chosen. Here are some of the subjects selected in these days: "The necessity of political education in the United States." "It is necessary to oppose immigration." "There should be no obstacles to immigration." "The regimen of the superior schools." "The question of slavery." "Influence of nature." "What can I learn from the Exposition of Chicago?" "Heroism." "Moral character of Jay Gould." "The workers and the drones." "Physical courage and moral courage."

There is in all this much show and emptiness, but there is also boldness and reflection; briefly, a mixture of good and bad, as in all human things.

We see here customs, necessities, intellectual and social habits which are different from ours. We must not judge them by our standard. Neither would it be well for us to admire and to imitate them freely. What is best for them would not be best for us. Each of us has his own course, and should hold to it. We may modify our methods, we may take from others what serves our purposes, develop and expand it, but we should guard ourselves from the notion that blind imitation of others is an essential condition of progress.

The following extract is from a report by M. Jules Violle, professor at the Conservatoire des Arts et Métiers, and also at the superior normal school (Paris), who was commissioned by his Government to study the scientific movement in the United States, especially as illustrated by the Exposition. This portion of his report appeared in the *Revue des Deux Mondes* of June 1, 1894 (pp. 607-611):



## THE CHICAGO EXPOSITION AND AMERICAN SCIENCE.

JULES VIOLE.

The vigorous and constant effort of Americans to raise the level of their superior instruction testifies to the importance of the scientific movement in the United States. Indeed, here public education is provided for as one of the first necessities of a free country. The States, cities, and rural districts impose heavy taxes on themselves in order that every citizen may acquire elementary instruction. More than 200,000 elementary schools are scattered over the country, and the annual expense for these reaches 700,000,000 francs.

But the original trait of the American democracy is its judicious predisposition toward the aristocracy of knowledge. This nation, justly renowned for its positive spirit, understands very well that superior instruction alone promotes the progress of ideas, the improvement of methods, and even the development of practical matters. The higher instruction is almost always the work of private individuals who have founded it and who maintain it, constantly adding to its resources. Its total receipts and expenditure, as given in the latest official documents, exceeded \$16,500,000 (about 84,000,000 francs). These millions have come voluntarily from the farm, from the counter, or the manufactory, and the generous initiative of the givers does not decline. \* \* \*

The circle of the higher studies has been particularly enlarged, especially in recent times, and American universities have been multiplied in emulation one of another. Of course, it is necessary to make distinction among the number. Some, especially of the newer ones, promise, perhaps, more than they accomplish in spite of their title of university, in spite of their official endowments and patronage. Europe has not the monopoly of grand programmes on paper. Others, on the contrary, bearing the modest name of college and having complete independence, are universities of the first rank. Naturally the degrees differ in their value according to the different quality of the teaching bodies who grant them. We even hear that in certain establishments of so-called superior instruction the diplomas are acquired by means unknown to science and are conferred "*honoris causa*." These are abuses inseparable from liberty. The graduates of America, whose interest it is to avoid all ambiguity, mention simply the source of their degrees.

This spontaneous organization of superior education in the United States may be wanting in uniformity; nothing harmonious nor symmetrical; the effort has been to do much and do it quickly. But what powerful vitality in the tumultuous outburst of grand intentions! What constant progress in scientific studies, even in recent foundations! What generous ardor for competition with rivals in the Eastern States, which possess the advantage of experience and the prestige of previous service! The very absence of fixed method and established order in these efforts may make success so much the greater. The young universities of America find only encouragement in the history of their predecessors, which were poor at the beginning and to-day are flourishing.

The oldest of all and justly the most celebrated, Harvard College, was originally a little school founded in 1636 by the Puritans of Massachusetts, and two years afterwards, organized by the aid and pecuniary contribution of John Harvard, a nonconformist minister, who had come from Cambridge, where he had taken his degrees at Emanuel College. However, the name of the great English university was given to the humble cradle of the American college. This title marked a noble ambition, which from that time the zeal of the professors and students endeavored to justify. The whole colony celebrated as a holiday the solemn day of the month of August, 1642, when the first nine students of Harvard received the degree of "*bachelor pro more academiarum in Anglia*." The work went on slowly at first. Its financial situation was far from satisfying the wishes of its founders, for the local legislature,



in spite of the Puritan convictions by which it was animated, several times authorized the administrators to procure money by lotteries; that of 1806 produced \$25,000 (125,000 francs). The era of prosperity began about the second decade of the nineteenth century. But it is especially during the last twenty years that the progress has been rapid and the transformation perfected. The college, confined formerly within the somewhat narrow limits of denominational ideas, presents to-day the amplitude of the true modern university as regards its teaching personnel, its equipment, and its complete departments. Two hundred teachers of every order there dispense the higher instruction to 2,000 students, whose earnest spirit, stimulated by a library of 350,000 volumes, may draw freely from the different sources of human knowledge. All instruments for working, all perfect means for learning, laboratories, museums, observatories, botanical gardens, etc., here conduce to the intellectual initiative. The buildings impress the eye by their grand proportions. Two chapels, seven dormitories, five large dwelling houses, seven buildings, among them the beautiful edifice of granite which contains the library, arise on a quadrangle, which covers almost 10 hectares (about 25 acres). Moreover, these different buildings occupy only half of the whole domain belonging to the college. Further, to these must be added the numerous small buildings and important annexes which are situated in Cambridge or in Boston, and extend even into the adjoining districts. Thought goes back to the single building of former times established upon a small site covering less than 2 acres. The primitive seed has yielded fruit.

At present the annual budget of the university reaches \$1,000,000 (5,000,000 francs). Nevertheless these resources scarcely correspond to the need in spite of the prudent administration of the council and the skillful management of the treasurer, who secures from his funds more than 5 per cent, and the coffers would always be empty if the generosity of the "sens of Harvard" did not keep them full. What intense life in all departments of the university! Physical exercises are not neglected. Care is taken to measure and photograph the students at regular intervals in order to control, experimentally, the progressive results of a methodical training, specially intended to preserve beauty and just proportions of form. This is the classical ideal of an accomplished man, to be at once both beautiful and good, *καλὸς κ' ἀγαθὸς* the Greek type returns to America. Is there not even in New York a school of beauty for ladies, where they learn to speak, to walk, and even to sleep with grace? Harvard University has become a nursery of learned men, who carry their knowledge to the four corners of the Union. Its doctors of science, to speak only of those, have no longer reason to envy their brothers in Great Britain or on the Continent. We will not say that they are identical. Without doubt with the prompt diffusion of ideas by means of papers and books, by congresses and the intercourse of every kind that the ever-increasing facility and rapidity of communication among thinking men establishes, higher instruction must be everywhere the same in its essential lines. But upon this common soil each nation impresses its own mark, and none is more jealous to leave its own than the United States. The American brings the qualities of his race to bear upon scientific culture, the patient energy, quickness of eye, inventive imagination, practical sense, which knows how to draw from science application and profit.

This practical sense is not only manifested by ingenious inventions destined to facilitate the life of all persons and to make the fortune of the individual inventor. It is shown also in the creation of certain university specialties which we are not accustomed to see among the faculties properly called thus, for instance, schools of dentistry and of agriculture. The last are of great service, especially in the districts where various crops are cultivated. The University of California possesses a model of this kind. This establishment undertakes the analysis of soils, indicates to those interested the species of plants best suited to different districts, and furnishes, gratuitously, the necessary seeds or grains. As to schools of dentistry they exist in nearly all American universities; Harvard itself has one. That of Philadelphia is

the most renowned on account of its practical method, the luxuriance of its installment, and the importance of its works. Twenty-two thousand patients are mentioned in its recent reports. The weight of gold employed reached 6 pounds. The instruction, which is very complete, constitutes a real faculty comprehending no less than seven distinct chairs. Students come from Europe and the Indies to take their degrees at Philadelphia. The Americans are the first dentists of the world.

Can one speak of superior instruction in America without noting how eagerly the women strive to participate in it? The movement does not diminish, but the contrary. Every day sees an increase in the number of those who study mathematics, physics, law, medicine, Latin, or even Greek. The programmes of the studies and the examinations are, moreover, identical for both sexes in the very practical system of coeducation as well as in the special courses. The young female students bring to this high instruction, along with the ardent desire to learn, the determined resolution to obtain social equality, of which scholarly equality is the prelude. But their native grace remains. They add to it solid qualities and a fund of varied knowledge. Thus conversation with American women constitutes the charm of society in the United States.

A learned doctor of Boston points out some shadows in the picture. With statistics in his hands he pretends to prove that the number of births decreases in proportion as the level of female instruction rises. His patriotic fears even cause him to foresee the moment when the race will end in an "intellectual apotheosis." Is this prognostic serious? If young America is already attacked by evils from which the older peoples suffer, its robust constitution and its exceptional resources assure conditions of resistance much superior.

The Exposition of Chicago has shown with what vigor all branches of human activity are developed in the United States. Certainly science has not yet attained heights comparable with those on which at present the fortune of the capitalists is elevated; the dollar holds first place, but science advances with rapid steps. The scientific movement, of which we can only here give a summary idea, is not concentrated in the old States of the East, which are like a transatlantic Europe, it extends over the youngest States. The Americans comprehend that high intellectual culture is not alone a question of elegant luxuriance or of national self-love; the prosperity and even the future of the country depends upon it. A mere glance at the different nations of the two worlds suffices to prove this.

#### CHICAGO EXPOSITION—PRINTING AND THE BOOK TRADE.

One of the most important reports called forth by the Chicago Exposition is that of the exhibits of publishers and booksellers, by M. Henri le Soudier.

Two tasks were committed to M. le Soudier; first, to secure complete information as to the state and future possibilities of the trade in French books in the United States, with suggestions of such reforms as it might seem well to adopt; second, a comparative survey of the French book exhibits and those of other countries. Both subjects are fully treated and the work has scarcely less interest for the general reader than for the book trade.

The report is introduced by general observations as to the plan of the Exposition, the buildings and grounds, with a glance at its commercial bearings. The author then proceeds to discuss the conditions offered by the United States for the sale of books. The reports of previous expositions have not, he says, attempted a study of this nature, which seems to him of greater importance than the comparative estimates of exhibits. In this study M. le Soudier dwells upon the libraries of the United States, their number, variety, ample resources, and the liberal spirit in which they are conducted. He notes, also, that women form a large proportion of readers, "the men," he says, "too often lack the time for reading; they content themselves with newspapers. This explains the extraordinary circulation of certain political sheets, a circulation unknown in the old countries, and the number of pages in a



single paper as, for instance, in the Chicago Tribune. The women on the contrary have more leisure. In contrast with the men, who generally quit school at the age of 15 or 16 years to devote themselves to business, entering at once upon their apprenticeship, the young women prolong their studies much longer, often even until 20 years of age. After marriage they continue their education, pursuing some department of fine arts, or some special study. As the man, unless he is engaged in some one of the liberal professions, has had only a limited education, while that of the woman has been much more extended, her mind is more cultivated, thanks to her reading." "I speak here," he adds, "only of the business class, which forms about four-fifths of the population of the United States. This intellectual predominance of the women explains the large place given to literary works and romances in the public libraries, while in the universities classical and scientific works predominate."

The reporter considers then the relative demand for German and French books in the United States. "In this respect," he says, "the first thing to be noticed, although it is painful to confess it, is the prominence given to German books in a large number of important libraries, a proportion which rises even as high as 90 per cent in certain cities. Some libraries indeed, but these principally in the East, comprise a large number of French books, chiefly literary works; but after leaving the Atlantic States the farther West you go the more the German language dominates. It is the same with periodicals. Thus, in the public library of Chicago, are comprised 65 German periodicals, more than 21 newspapers in the German language, published in the United States, chiefly at Chicago, while there are found only 21 French periodicals and 2 newspapers in the French language, published in the United States—the "Courrier de l'Illinois," published at Kankakee, and the "Courrier des États-Unis," published at New York.

This state of things is attributed very justly to the great German immigration and to the care which German families take to maintain their language and to impart it to their children. Moreover, as a consequence of the intimate relations that spring up between American and German youth, many of the former are influenced to complete their studies at Berlin, Leipsic, or Heidelberg, and thus the passion for German literature is diffused. He observes further that in the programmes of our leading universities German courses are generally more extended or numerous than the French.

While recognizing that there are causes for the superior influence of the German over the French language which can not be overcome, M. le Soudier is of the opinion that the circulation of French books in the United States might be greatly increased, and he suggests practical measures for accomplishing this end.

There were, it will be seen, business reasons for the particular attention which he gave to the German exhibits.

It must be remembered that Germany was not represented in the Paris exhibitions of 1878 and 1889, and hence the Columbian Exposition afforded the French the first opportunity in twenty years for effective comparisons with their rivals. To this opportunity and the good judgment of the reporter we owe a most appreciative and reliable account of this important division of the German exhibit at Chicago. The value of the description is enhanced by detailed accounts of the rise and progress of the principal German publishing houses.

Of the exhibition of German book dealers as a whole, M. le Soudier says: "Germany was very well represented in this section of the Exposition, and its exhibit, comprising a large number and variety of works, was very fine. The plan of piling up books upon tables left much to be desired so far as regards the effect upon the eye, but accomplished the desired end, which was to give the works the freest possible advertisement by putting them within reach of the public, not upon the shelves of bookcases, but, as it were, into the very hands of the visitors in such a manner as to excite their curiosity. The arrangement was not artistic, but in a country where Germany has so many representatives the result was not disappoint-



ing. The corresponding section in the German pavilion, situated upon the borders of Lake Michigan, was always filled with visitors. Two superintendents and a number of assistants were employed to answer inquiries and give explanations.

"Before examining the exhibits in detail, a few words upon the German book trade will enable us to comprehend better the close relations that exist between the German book dealers, not alone those in Germany, but wherever they are established.

"Of all countries Germany possesses the greatest number of bookstores. There are in all 6,104, according to the "*Führer durch die buchgewerbliche Kollektiv-Ausstellung des Deutschen Reichs*" in Chicago, 1893, which contains the most interesting information upon this subject. These business houses are distributed in 1,204 cities. Moreover, they are found in nearly every country of the world. In Austria there are 772; in the other States of Europe, 869; in America, 125; in Asia, 9; in Africa, 8, and 6 in Australia. The interest has developed more readily among German-speaking peoples than among others; for example, in Austria-Hungary and in the German Cantons of Switzerland. It is represented in the most distant countries, wherever German people have located. By the expression 'book trade' must be understood the commerce in books properly so called, including music books, art books, geographical charts, etc."

M. le Soudier proceeds with a minute account of the manner in which business is conducted, describes the operations of the book dealers' association, the "*Börsenverein der deutschen Buchhändler*," founded at Leipsic in 1825; he considers the publishing houses and their equipments, from which issued 22,000 new books in 1891, besides many reprints; discusses the growth in illustrated editions, the printing of paper currency, and the nature and improvement in technical processes, engraving, stereotyping; the manufacture of paper, inks, binding, etc.

With respect to the provision for technical instruction, M. le Soudier says: "It remains to speak of this provision which is of such immense importance to the development of the printing art. Besides the technical schools maintained by the State, there are in all the great publishing centers special schools for the training of apprentices, or side by side with the schools for ordinary instruction, technical courses, for the benefit of the future printers. Such schools are found at Berlin, Leipsic, Hamburg, and Dresden. The great societies of printers also foster technical instruction. They make periodical reports on the subject, they give exhibitions of the best work, and maintain technical libraries for the use of those interested. The Royal Academy of Fine Arts and School of Arts and Trades at Leipsic has founded a superior course of typographic drawing; here also are taught all the graphic arts, and workshops are added with a view to uniting practice and theory. A society, the "*Zentralverein für das gesammte Buchgewerbe*," has centralized the technical instruction and charged itself with defending the interests of the corporation. This society possesses a remarkable museum and maintains permanent expositions, which are of inestimable advantage for all those who seek to perfect themselves in the printing art. In this museum is the famous Klemm collection of incunabula. It was purchased by the Government of Saxony for about \$100,000 and presented to the "*Zentralverein*;" the society constantly adds to the collection from gifts which it receives. In the annual exhibits all improvements affecting the book trade are displayed, and every week new works are added to the collection. From time to time great expositions are opened, which afford those interested opportunity for perfecting themselves in the art of printing, particularly by means of the various models offered for their examination. Finally, for the last four years, the association of printers has published an annual catalogue of models selected from every country and which, in this classified arrangement, can be consulted at one's leisure."

Of our own country, M. le Soudier says: "As would naturally have been expected, the American book trade had full representation at Chicago; it occupied a large space on the western side of the Manufactures Building. The American publishers

did not join in a collective exhibit, but each house made its independent display. Here, again, it was noticeable, as in the German section, that the books were not exposed in closed cases, but were placed upon tables. The Americans, people of a practical and commercial spirit par excellence, have applied to books the means generally employed for securing purchasers for ordinary merchandise; that is, to make the public see and appreciate them. Active and intelligent agents were present who, without losing sight of the business side, explained everything with great courtesy, and even invited visitors to examine their collections."

M. le Soudier then passes in review the statistics presented in the annual report of the Publishers' Weekly for 1891, showing the development of the book trade in the United States since 1880, following this with some general observations upon the distribution of libraries, the chief features of the system of publishing and bookselling among us, i. e., the retail stores, the publishing houses, the news companies, etc.

Of the art of printing as here practiced he says: "Printing has reached a degree of development in the United States that surprises us. Whether we consider the printing of the great dailies with their enormous circulation—and we have seen already what facilities are here afforded by the Hoe presses—or of choice editions, "*ouvrages de luxe*," the triumph of the American machines is beyond question.

"The United States, perhaps, exceeds all other countries in the number of finely equipped printing houses. They work rapidly and well, both as regards the number of impressions and the various processes employed. There is, however, a shadow to the picture. It would seem that the proof readers are not quite equal to the requirements, if we may judge from the official catalogue of the Exposition, in which mistakes and misprints abounded, especially when it came to the names of exhibitors."

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The peculiar excellence of American autotypes and lithographs is noted, and the superior quality of the paper used in American books and in journals. As in the case of Germany, a detailed description is given of the exhibits of the principal publishing houses. Finally, after a survey of the exhibits of other countries less detailed than his accounts of those of Germany and of the United States, M. le Soudier sums up his work as follows:

"My task is finished. I have spared no effort in its accomplishment, aiming above all to give a general idea, not alone of the production of books, but of the management of the book trade in the countries represented at Chicago. These two factors are intimately related, for it is beyond question that in many countries the conduct of the trade has a great influence upon the production and the sale of books. My chief desire has been to furnish valuable information to my countrymen.

"Although better equipped as regards implements than many of our neighbors, France has yet much to learn in respect to this business. The retail book dealers are very useful auxiliaries in our system, but many of them have not a sufficient understanding of the business to conduct it successfully. We need special schools for training booksellers, as we already have for training printers, in which young men who intend to take up this branch of trade may acquire the particular knowledge which relates thereto. It is necessary above all that they should acquire the foreign languages by an actual residence in the respective countries in order to perfect themselves in the tongue, and at the same time study the commercial processes which differ from our own. Foreign countries offer a vast field for the circulation of books, but we must know them well to get an opening in them. To recapitulate conclusions already presented in the preceding chapters—

"As regards Germany, we have seen that in the production of books that country surpasses our own and that German books have a wider circulation abroad. Immigration explains this in great measure, and if the exportation of German books increases constantly, this must be attributed to the number of Germans who are found everywhere, and who penetrate as professors even into foreign universities, where they carry the language, the ideas, and as a consequence the books of their

mother country; but granting all this, we must not lose sight of the fact that a good organization has greatly facilitated this distribution.

"The United States, although it produces less, has achieved some surprising results, thanks to the marvelous processes in vogue, to the excellent papers and the perfected implements.

"England excites admiration by the clearness and uniform excellence of its impressions, by its fine paper and art processes, which equal those of America, from which they are so often borrowed.

"Aside from these three countries, France encounters no serious rivalry, but if we take the first rank in most of the branches of the industry considered, in printing, lithography, and binding notably, as in everything that is a matter of art and of taste, our rivals press hard upon us in other branches and we can not deny that the struggle is becoming serious. We sustain our part bravely, and it must be admitted, with success, but in view of the surprise that awaited us in the processes of reproduction employed by the Americans, and their marvelous implements, in view of the large exportation of books by our neighbors across the Rhine, we should redouble our energies and turn our efforts to this twofold purpose, namely, to maintain the superiority of our manufacturing processes, improving them constantly, and to circulate our publications more and more widely by the use of all the known means of advertising. This would be to serve at once the interests of our own business and those of France."





## CHAPTER V.

### MEDICAL INSTRUCTION IN THE UNITED STATES AS PRESENTED BY FRENCH SPECIALISTS.

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The measures for the reorganization and development of medical instruction in France, agitated for several years and culminating in the decrees of 1893, have been considered in full in a previous chapter of this report.<sup>1</sup> This movement has drawn attention to the corresponding instruction in other countries, and naturally at the time of the Chicago Exposition medical instruction in the United States was a subject of special investigation by accredited representatives of the French Government.

Two valuable reports on the subject have appeared—one very brief, by Professor Bonet-Maury, member of the general council of the Paris faculties (University of Paris), and another extensive and exhaustive report by Dr. Marcel Baudouin, delegate from the French Government to the Chicago Exposition.

Dr. Bonet-Maury confines himself to the courses preparatory to medical study in the United States, or rather, as we should say, the entrance requirements which are the index to the preparation. His matter consists very largely of these requirements as published in the catalogues of the leading schools of medicine in this country. These need not be reproduced here, as they are easily accessible in their original forms, and in several instances they have been greatly modified since the schemes quoted by Dr. Bonet-Maury were published. It is rather the reflections and comparative estimates which accompany these citations from American catalogues that are of interest in this report. These are covered substantially by the following extracts:

"There exist in the United States about 240 medical schools, 5 or 6 of which are exclusively reserved for women.<sup>2</sup> The course of study is generally for three years, the summer terms being short. The entrance requirements are very elementary. Of 24 schools which responded to an inquiry of the Bureau of Education in 1890, 10 only had instituted an entrance examination, and 14 demanded some slight proof of capacity on the part of those desiring to study medicine. The condition announced on the majority of programmes is 'knowledge of all branches of a good English education, including composition, mathematics, elements of physics, of chemistry and natural sciences.' Some add the rudiments of Latin and algebra. In many other cases the term 'good English education' is defined: Knowledge of grammar, arithmetic, geography, and history, or merely ability to read, write, and cipher. Now all this is included in the programmes of the public schools; hence, in fact, the only condition for entrance into the majority of medical schools in America is 'thorough primary instruction.' In a few schools only an account is kept of the number of students who have secured the degree of bachelor of arts or sciences. It is evident that with such a system the diplomas of doctor of medicine are very unequal and generally of very small value. The degree of doctor does not offer

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<sup>1</sup> See pp. 228-237.

<sup>2</sup> Schools of dentistry, pharmacy, and nurse training are included in this number.

therefore a sure guaranty to the public, and we understand the warning of one of our friends at our departure: 'If you get sick in the United States, God preserve you from falling into the hands of an American physician; rather let a good nurse take care of you.' The inconvenience of this state of things has not escaped the learned physicians and the universities, and there is no want of them in America, and for some years past no want of energetic reaction against the notorious insufficiency of requirements for entrance into the medical schools, and of the length of medical studies. This movement, which aims at a four-years course with at least six months' instruction each year, has found its most earnest advocates in the Illinois board of health, in Johns Hopkins University, and in the University of Michigan."

With regard to courses directly preparatory to the study of medicine, Dr. Bonet-Maury says:

"So far as my knowledge goes, 8 universities of the United States have established preparatory courses for the medical faculty: (1) The University of Pennsylvania, Philadelphia; (2) Cornell University, Ithaca, N. Y.; (3) Yale University, New Haven, Conn.; (4) Princeton College, New Jersey; (5) Lake Forest University, Illinois; (6) Northwestern University, in Evanston, near Chicago, Ill.; (7) Johns Hopkins University, Baltimore, Md.; (8) University of Wisconsin, at Madison.

"I shall cite as models the universities of Pennsylvania and Yale, which I have visited, and which seemed to me to have established the most thorough scientific preparation for medical studies.

"In Philadelphia the instruction was organized by Dr. Pepper, president of the university, professor of the medical faculty, a very renowned physician, and, let me add also, a great admirer of the French language and literature. According to the rules adopted by the faculty, everybody desiring to enter upon medical studies must pass a written examination consisting of an English composition of about three hundred words and an oral examination upon the elements of physics. He is also advised that he will find it of great advantage to take the natural history and chemistry course of the college, which corresponds to our faculty of sciences. This course lasts for two years and comprises the following subjects:

First year:	Weekly hours.
General biology (lectures and laboratory work) .....	6
General zoology .....	1
Anatomy of the mammals .....	6
Structural botany (phanerogamic plants; lectures and laboratory work) ....	6
General inorganic chemistry (laboratory and class) .....	3
Free-hand drawing from models .....	3
Latin, French, or German (elective) .....	3

#### Second year:

Biology (systematic study of the invertebrates and the vertebrates; laboratory and class) .....	6
Histology and animal embryology .....	6
Histology of plants—cryptogams .....	6
Animal physiology .....	3
Human anatomy .....	6
Analytic chemistry, qualitative analysis, laboratory work .....	6
Latin, French, or German (elective) .....	3
Mineralogy, crystallography (elective) .....	2
Geology (principles), paleontology of vertebrates (elective) .....	2

A total of about 25 hours a week the first year, 35 or 36 hours the second, including practice in the laboratory.

"The students who have followed these courses and passed satisfactory examinations receive a certificate which gives them the right of entrance into the faculty of medicine without examination; they also are able, as a rule, to pass at the end of the first year the examination upon certain branches of the second year, and are also



exempted from following certain courses of the first year. Those who can also prove that they have done laboratory work in chemistry or in biology equivalent to that of the first year of medicine are admitted to the courses of chemistry and the laboratory exercises of the second year of the medical course. Finally, those who possess the diploma of bachelor of biology can enter immediately upon the second year of the medical course.

"At Yale University there is a school of sciences, i. e., the Sheffield, which offers courses of physical and natural sciences to the future students of medicine. No one can be admitted under 15 years of age and without passing an entrance examination. After having followed the courses of biology for two or three years, the student may obtain a degree equivalent to bachelor of sciences (French). The following is the programme:

*First year.*

First semester:	Weekly hours.
Organic chemistry (lectures and recitations).....	2
Qualitative analysis (laboratory practice, recitations).....	17
Mineralogy (analysis, determinative).....	4
English.....	1
French.....	3
German.....	3

About 30 hours, including 18 in the laboratory.

Second semester:

Organic chemistry.....	2
Comparative anatomy and general biology (lectures, recitations, and laboratory work).....	19
Mineralogy.....	4
Embryology, eight lectures in summer.	
Physiology.....	2
Botany (laboratory and herborization).....	5
English, French, and German.....	6

About 32 hours, including 20 in the laboratory.

*Second year.*

First semester:

Physiological chemistry and physiology (laboratory lectures and recitations).....	6
Organic chemistry (lectures and recitations).....	2
Geology.....	3
Botany—vegetable chemistry; laboratory, microscopic preparation.....	5
Zoology.....	2
French.....	2

Total, 32 hours, including 18 in the laboratory.

Second semester:

Chemistry, physiology, toxicology.....	27
Lectures, recitations, laboratory, theoretic chemistry.....	2
Geology.....	3
Zoology.....	2
Laws of heredity and physical education.....	2
Sanitary science.....	2
French.....	2

Total, 40 hours, including 20 in the laboratory.

"At Johns Hopkins University, where medical instruction is just being organized on the basis of four years' study, I was assured by President Gilman that the future students in medicine would be required to give proof of solid attainments in chemistry and natural history, the same to be acquired in the faculty of science. This is the case also at Cornell, Princeton, Lake Forest, Northwestern University, Michigan, Wisconsin, etc., and now, the impulse having been given by some of the most

renowned universities, a thorough scientific preparation will soon be the general condition required for admission to the study of medicine."

In reviewing his observations and the facts collected, Dr. Bonet-Maury says:

"From this investigation, made in the most important universities of the Atlantic States, I am convinced that the men who lead the medical instruction in the United States are strongly exercised over the system that actually exists in the greatest number of medical schools. They acknowledge the low standard of the medical body of their country, and attribute it to the following causes: The great number of medical schools, which is out of all proportion to the number and the wants of the population, the excessive shortness of the course of studies in general, and especially the facility with which the degree of doctor of medicine is secured. Remarkable things! The women doctors in the United States enjoy the reputation of being better instructed than their brothers. This comes, without doubt, from the fact that their colleges are less numerous, and, having more perseverance, they remain longer in their apprenticeship to the services of the hospital which are open to them before seeking independent patronage."

The report concludes:

"It is a good sign that the leaders of medical instruction in the United States have seen their weak points. As fast as evils are recognized the proper remedy is applied. The courses in the physical, natural, and biological sciences have been strengthened, and are considered as a preparation to or indispensable complement of medical studies. Moreover, these courses must be given by the professors of the faculty of sciences or of philosophy, as they still call it in remembrance of the name given formerly to physics: 'Philosophy of nature.'

"To sum up, the Americans have entered resolutely that road in which we have already been for some time. Let us take care that they do not surpass us, for progress in that country, as compared with us, is as much more rapid as is transmission by electricity than locomotion by steam."

## THE MEDICAL SCHOOLS AND HOSPITALS OF THE NORTHERN UNITED STATES.

As described by Dr. MARCEL BAUDOUIN.

### INTRODUCTION.

Delegated by the minister of commerce to attend the Columbian Exposition, I arrived in the United States in the month of May, 1893, and, upon the advice of the commissioner-general of the French section, I decided to utilize my time in visiting the principal medical schools of the Northern States and the hospitals which form indispensable annexes to these schools.

To the numerous documents which I have collected in the course of my transatlantic journeyings, of which a résumé is given in this work, I have added at each stage of my journey, in order to break up the monotony of dry descriptions of universities and hospitals, some reflections on the great scientific institutions of North America, and on the customs and manners of this interesting country, so far, at least, as regards the hygiene of the cities which I visited; also the habits and actual tendencies of the Americans whom I have met, studied, and understood.

These digressions will be pardoned, since they give life and force to descriptions necessarily very technical and without color. The necessity of these observations, which at first may appear frivolous, will be better understood, perhaps, if I add that the chief interest of my excursion to America seems to me to-day to lie much more in the examinations of the customs of this country and the causes which have led to them than in the mere descriptions of private institutions, worthy, indeed, of admiration, but very unlike and not easily classified.

It will readily be seen that I was not able in these few months to study the medical schools of the numerous centers of medical instruction which flourish at present

in America. I did not go to Canada, but confined my visits to the United States, and I shall give only reports of the most diverse types of the institutions which I have myself seen and studied.

Thus the old and renowned schools of Cambridge and Philadelphia from the first demanded my attention. The younger but already celebrated universities, such as Johns Hopkins, of Baltimore, and Clark, of Worcester, next engaged me, and I am convinced they merit all the good that has been said of them in the countries of Europe. Some colleges, modest but worthy, such as those of San Francisco, have never been described by a French doctor, and I believe I shall only fulfill my duty as a Frenchman in making known in the mother country the story of their progress, thanks to the ceaseless and accumulated efforts of some of her sons settled in a foreign country.

Other schools more humble, like those of Buffalo, and still others, whose rapid development in the new sections challenged my attention, failed not to furnish me curious points of comparison with our provincial schools. I was anxious to visit them and do not in the least regret the time consumed in these long trips to the far West.

I do not know that I have succeeded in my purpose, which was to satisfy the just expectations of those who, doubting neither my good will nor enthusiasm, did me the honor to confide to me so delicate a mission, a little heavy for young shoulders. They will, however, permit me to recall the fact that it is the first report made in France, full and detailed, on medical education in the United States, with added data of the schools of the far West.

What is most astonishing, one may search in vain even in America for a work altogether comparable to this which I have sketched.

My predecessors have studied only the notable institutions of the East. I have had the good fortune to push my researches further, and I have only the most profound thanks for those who gave me with no grudging hand their kindly counsel as well as their material and moral aid.

Dr. Baudouin considers briefly the scientific departments of the Government located at Washington, dwelling at some length upon the Army Medical Museum, of which he says:

#### ARMY MEDICAL MUSEUM.

This medical museum and library is independent of the eight medical societies of the country. The building, an imposing mass of red brick, is situated near the Smithsonian Institution. It contains two interesting collections—one the library of the American surgeon, well known in all the medical libraries of Europe, and the other similar to the “Musée Orfila” of the medical faculty of Paris, constituting the most complete collection of specimens of surgery in the world.

This museum has two stories and contains a great number of anatomical specimens and a collection of ancient instruments, some few of which were shown in the Exposition at Chicago. The affections of the bones are the lesions best represented. The anatomical preparations derived from the wounded in the civil war constituted the basis of the collection, which has been enriched from time to time by the surgeons and doctors of the Army. Altogether it is like our museum of “Vol de Grace.”

Annexed to the two grand halls, in which are placed specimens preserved in alcohol (monsters and interesting cardiac lesions) and dried specimens (wounds, fractures by firearms), are two principal laboratories (histology and pathological anatomy, with bacteriology). We visited this institution in company with Dr. John S. Billings, who showed us magnificent preparations of human embryology.

In this museum the famous library of the Surgeon-General's Office is placed. It is one of the most remarkable medical libraries of the world and the largest in America, comprising 200,000 volumes. It has acquired its reputation through the activity of its chief, Dr. John S. Billings, who has published an index catalogue of this library,



made with the most praiseworthy care. The last volumes of this work are in press and soon these fifteen great folios will form a publication which no medical library can afford to be without. Dr. Billings showed us at the same time the hall for the medical journals, the halls for card catalogues, and the rooms for the librarians—a model to imitate; an example which no one has followed in Europe.

#### MILITARY MEDICAL SCHOOL.

A few days after my arrival at Washington a military school of medicine was established for the young doctors recently appointed to the Army. These students will have, therefore, at their disposal a museum and library of the first order.

After detailed description of the principal medical schools and departments of the Northern States, Dr. Baudowin sums up his observations substantially as follows:

The study of the medical schools of the United States, taken as a whole, is a difficult matter. The institutions which may be grouped under this head differ so much, the circumstances under which they have been founded and are now developing are often so special in their nature that there is danger of falling into many errors and of expressing somewhat contradictory opinions if the attempt be made to describe these schools as a whole. If we consider also the extraordinary number of schools, which seems surprising at first, but is easily accounted for when one understands the general status of physicians in a country so vast, and where professional life is easily entered; furthermore, if one considers the facility with which institutions are formed or disappear, without leaving any trace, the simplicity also of their early organization, the various resources of which they may avail themselves—with all these considerations in view, he will understand the difficulty of making selections out of a long list, comprising colleges, medical departments of numerous universities, and sometimes mere factories for “bogus diplomas.”

However, to bring a certain clearness into this question, which seems at first so complicated, it suffices to examine it in the light of a single leading idea, namely, the basis of instruction in the United States, scientific as well as medical. I allude to the complete “liberty of instruction.” It suffices to remember that all instruction is absolutely free from Government interference, as was formerly medical practice also, diplomas being conferred by the most dissimilar institutions.

As everybody knows, in the transatlantic country it is private initiative which undertakes to furnish to the fifty States, Territories, or districts of which it is constituted, physicians, pharmacists, and dentists, as well as lawyers, engineers, and architects. The public authorities exercise a control so restricted that it may be called none, compared with countries where centralization reigns.

As regards medical schools, the States confine themselves to recognizing their creation by according to them a charter and registering the diplomas which they confer, without endeavoring to ascertain the intrinsic value of the same.

There are at present in the United States several kinds of medical schools. Formerly the classes were still more numerous, but some have been abolished, owing to competition, which increases every day.

The regular schools may be compared with those of the Old Continent, and which in our country are called “allopathic.” These predominate, and especially so at the present time, but in America, where some years ago homeopathy was appreciated by the majority of citizens about as much as the bonesetters in France, there exist also centers of homeopathic instruction which were at one time very important and which still enjoy much prestige. \* \* \* Among schools called irregular schools, there exist also other types. I refer to the eclectic schools (eclectic colleges), and the physio-medical schools.

The fraudulent schools, on the contrary, have totally disappeared. I will speak of them further on, but they are an invention which is dying out.

In the regular schools one principal feature is noticeable. Some are attended by men and women, and the students of both sexes are admitted to these without difficulty, pass their examinations side by side, as in Europe, and obtain their diplomas. A smaller number are exclusively reserved for young women students of medicine. These institutions have no analogy anywhere, and this is an American specialty which deserves more than simple mention.

But whatever the variety, all these schools are of an essentially private order; all have been originated by private individuals, and generally in the following manner: A very rich manufacturer or a successful speculator (there are but few other lucrative professions in the United States) gives from his fortune, and often although he has children (which is also a marked characteristic of the country beyond the ocean), considerable sums for the foundation of a university. First, very elementary instruction is organized; then, when other liberal gifts have increased the resources, professional schools are successively created—an important expedient for the graduated students—and rapidly enough a medical department. This was the case nearly three hundred years ago with Harvard University at Cambridge, near Boston, and has taken place at the present time in Worcester (Clark University), in Chicago (Rockefeller University), in Washington, San Francisco, etc.

At other times the practicing physicians of a city which is young but flourishing and with promise of a successful future together found a school. In this case it is ordinarily called "College of Physicians and Surgeons." It must be confessed that what prompts this action is the desire of the physicians to add to their title of doctor of medicine that of professor more than the wish to be useful to their fellow-citizens or to the future young men of the country. But what does it matter since these local attempts soon result in schools full of life and enthusiasm which become vigorous rivals of the older establishments. The latter are thus prevented from reposing upon their laurels and forced onward incessantly. These physicians write out statutes, elect a council of administration, and request the State authorities to inscribe the new creation in the official registers. This is seldom refused, and is equal to a regular authorization. Then prospectuses are freely issued in order to announce the new creation; the medical papers publish the course and the list of the professors, who but yesterday were simple physicians, more or less unknown. This is business; it must be hurried, and here, as everybody knows, the Americans are at home. Students come in greater or less numbers, and in the second year diplomas are distributed. Is not the good will of those who, from the very beginning, have shown confidence in the enterprise and in the professional ability of the young teachers, to be encouraged? The graduates are then permitted to practice medicine in the State where the school is established and often in almost all the States or Territories of the Union.

At first the resources of the school are limited, as the fees of the students and the sums given by the founders are the only sources of revenue. The buildings are rudimentary, and the laboratories poor and meagerly equipped. But if by chance some distinguished and energetic person has come into the corporation, reputation does not wait for the lapse of years, and endowments increase. Splendid iron and brick buildings are erected, dispensaries and soon hospitals are founded.

Thus, following the examples of similar institutions which exist in England, the principal colleges for surgeons and physicians in the Union have developed the old colleges of Philadelphia, New York, Boston, San Francisco, etc.

For some years past this liberty seems to have been a little restrained, and now in certain cities diplomas can not be obtained with the same facility. Everywhere, indeed, where boards of health are organized the parchments presented for inscription are carefully examined, and if it is discovered that the school by which they were issued confers them too easily, they are not registered. This occurred some years ago in New Jersey, and a college where the examiners exposed the fact that too much indulgence was shown toward students was forced to shut its doors.



The Illinois State board of health has endeavored with remarkable zeal to search out those institutions which are still questionable, and to this end it has published a prospectus setting forth the minimum of qualifications required from a school in order that it should be classified among those giving satisfaction. But, as may be imagined, many do not yet correspond to the required conditions, although recently very remarkable progress in this respect has been accomplished almost everywhere.

Moreover, since 1877, there has existed an "Association of Medical Colleges," which has succeeded in grouping together into a strong society all those schools which desire that the level of the studies should be raised. The statutes of this association are such that at present all the colleges that are members of it may be considered as representing sufficient guaranties, for none of the irregular schools can be admitted there. In a country like the United States one can not ask more, and this control of the institutions by each other is certainly excellent; all this is very characteristic of this extraordinary country.

Certainly I would not say that all these colleges are comparable to the European faculties, and that their diplomas are equivalent to those which are conferred in Germany, France, or in the cities of other European countries; but one must not ask the impossible; and in a country where superior instruction does not hold the first place it is not surprising that the students know a little less Latin or Greek than ours, and do not devote themselves willingly to transcendental studies.

At the present time North America possesses 122 regular schools conferring diplomas either on men or women; but of these 9 are exclusively reserved for women. With the 113 others must also be classed the regular post-graduate schools, which receive only students having already graduated, practitioners who desire to perfect their clinical instruction. These institutions may be compared with the German and Austrian polyclinics and other preparatory or special schools (schools for anatomy, etc.), upon which I can not dwell here.

The 113 regular schools, which I will now consider, show certain common characteristics. They are seldom installed in grand edifices. The most important, that of the University of Pennsylvania, in Philadelphia, is nothing more than a modest building of moderate dimensions. The same is the case in New York, Boston, San Francisco. Often there is only an ordinary building of four stories, with halls for lectures, laboratories for chemistry, physiology, histology. Frequently a dispensary is annexed and occupies a part of the basement. Almost always (fact to be noted) the hall for dissections is found at the top of the house. We may say: "They dissect under the roof." In this way, I am told, more light and air are secured, odors are not detected, and it is altogether more private. Naturally, the whole building is heated by steam, which circulates in pipes; it is lighted by electricity and abundantly provided with ice water, the beverage of the American citizen; no apartment for the dean, no imposing place for business transactions—nothing but what is necessary; a lodging for the porter, or rather for the watchman, for porters do not exist there.

All that does not belong absolutely to the medical department is consigned to the other buildings of the university. This explains also the absence of a physical laboratory, and also the rare appearance of laboratories of natural history. Moreover, physics is not taught in the American schools.

The budgets are very limited, save in rich institutions, which are admirably endowed, as Johns Hopkins Hospital in Baltimore; often, also, the future is discounted. Appeals for funds are never made to the Central Government or to the municipalities. Very seldom does the State in which the college is located intervene to make up the expenses (the principal exception is the University of Ann Arbor, Mich., which possesses an old and highly esteemed medical department); the official subvention is unknown. Anyone can be a doctor in a few years in the United States, contrary to the custom in our old Europe, where a very careful preparatory instruction is necessary in order that one should obtain the degree of doctor. In America one may be at 20 years of age a grocer or a farm boy, at 22 a journalist, at



25 a lawyer or a doctor of medicine. The medical career is a profession like any other, and the epithet "liberal" would not be understood in a country where only one thing is desired, namely, to gain with the greatest rapidity the greatest possible amount of money; where the effort is only to perfect one's self in his art in order to get still richer. Therefore, of course, no one thinks of erecting high barriers at the entrances to the schools.

This is the reason why admission into a medical college is so very easy. It is sufficient to have graduated from a secondary school which is approved by the State in which one desires to study; in other words, to possess a diploma corresponding more or less to our ancient certificate of grammar, or to undergo a very easy examination, which means simply it is necessary to know English and a little Latin. To sum up, the American physician must have a general education which is scarcely equal to that of our health officers.

The professional courses which the students must follow bear a close analogy to those which the professors of our provincial schools have to take. The lectures even at Philadelphia and New York hardly bear comparison with those in the faculties of Bordeaux and Nancy. In America there is nothing to be compared with the faculties of Lyons, and especially those of Paris. The theoretical courses are generally good, but elementary; the exercises in dissection are, as a rule, rudimentary. The practical work, except in chemistry, leaves also much to be desired. On the contrary, this is not the same with the dental schools, the triumphs of the United States.

There are no competitive examinations; all professors are appointed by choice. Almost all are young and enjoying an income which at first appears very large; but, all things considered, the conditions are about the same as in our own country. It must be remembered that life is expensive there; that pensions do not exist; that the long trips necessary in that country demand great expense, etc.

The Yankee student, who never forgets the watchword of his fatherland, "Time is money," desires to finish his studies rapidly. He takes without much complaint a number of courses, lectures, quizzes, and subquizzes, which are perpetually presented him from 8 o'clock in the morning until 5 in the evening, save Saturday evening, for, like the laborer, he holds fast to this vacation of half a day. Only he who desires to devote himself to a professorship in a large university, works from love of science, if not of the special art. The majority attend schools where they may get immediately to work, where nothing is very difficult. This explains the rapid success of all new enterprises. The clinic instruction is a little more serious, thanks to the luxury which prevails in the teaching of the specialties. There is no small school which has not special professors of laryngology, otology, rhinology, orthopedy, etc. In spite of that the final examinations are not brilliant. If they should prove too severe, it would frighten the student, who would hasten to join a rival school.

An important question for the future of American medicine and one which has already excited great discussion, is that of the length of the courses in the different colleges. Not more than ten years ago, in a great center, doctors were made in two years! But at the present time three years are demanded, with sessions of eight months each. Few schools require four years; but several advise their students to study four years. Evidently there is progress; but that is not sufficient. I willingly admit that the American loses less time than the Frenchman, yet I shall never believe that he can learn in three years what it takes us five or six years to impart. Four years' attendance would not be too long even in the United States. This would certainly be better than to be obliged finally to attend a post-graduate school, particularly as those who practice in the country never can profit by these advanced schools.

The post-graduate schools in America are organized like other schools, with teaching corps whose numbers surprise a European; but in reality, when the whole situation is learned, they are found to differ little from the German or Austrian polyclinics.

All specialties are taught in the post-graduate schools; and in those of established reputation, as those of New York, among others, are represented by teachers of undoubted authority. Unfortunately it is not the same in all cities; it has been justly stated that the professors are not always men adequately equipped for the functions which they perform. In these institutions which pretend to be superior schools for perfecting students, the corps of teachers ought to be picked from the very best. Complaint has also been made that the professors are sometimes induced to take their positions solely for money. In delicate matters like these it is necessary to look carefully at the results accomplished. Now, it is unquestionable that these post-graduate schools are of real service, allowing young doctors to complete their studies and to be better armed for the battle. It is not necessary to ask more—to hope, for example, to see them transformed some day into so many medical “*Colléges de France*.” Besides, the American, who especially appreciates the useful, would not make this his aim.

There are at this time 19 post-graduate schools; but only 15 of them are regular schools; 4 are irregular, 2 being homeopathic and 2 eclectic. The earliest were founded in 1882 in New York, Philadelphia, and St. Louis; there are also similar schools in Boston, Baltimore, New Orleans, and in other cities, which I have already mentioned.

One might well desire that in Paris some analogous schools should be organized, as we possess already all the essentials for this, thanks to the medico-chirurgical corps of our hospitals, but our customs and our extraordinary admiration for all ancient institutions will prevent us for a long time from entertaining this idea.

The other regular schools of medicine which we have still to examine are those which are exclusively reserved for women.

Whether familiar or not with the American customs and with the famous question of coeducation, the European physician does not understand at once the reason for, and the importance of, these creations. We are told that in the United States many young women wish to study medicine. Very well! But why do they not attend the ordinary schools, as from their earliest youth until leaving the high schools they live in intimate companionship with the young men, on the same “campus,” sometimes under the same roof, eating at the same table.

Why are they more particular than their comrades in the schools of architecture, even in the law schools, who have no college reserved exclusively for them? What is the reason of this sudden change of opinion in a country where the system of coeducation has been so freely extended? It is only by recalling what happened when women attempted to force the doors of those schools which they could not easily enter that one comprehends why these special colleges came into existence.

America is certainly the country where the problem of the woman doctor is to be studied; but it must not be supposed that in the beginning this little revolution in customs was accomplished without all kinds of opposition to the pioneers who sought to climb over the barrier erected at the entrance into the liberal professions by the most powerful half of mankind. At first the older American schools declined to admit young women. Such opposition might succeed elsewhere, but to suppose that it would do so in the case of Americans is to misprize their resources and the disposition of the women. Were the American women overcome by opposition? No. This would have shown unpardonable shortsightedness, an insult to the national genius! The outcome proves that in this country “What woman wills, God wills!” The women, resolved not to confess themselves vanquished, went to work with that patience the secret of which they alone know, which serves them always when they desire to attain a particular end. They did so well that out of the very opposition they secured the foundation of special schools, which at the present time have become rival institutions, sometimes dangerous rivals, if account be taken of the standard of studies in the other regular colleges.

The result of this is that at the present time the United States possesses 9 regular schools of this kind (there must be counted, too, a homeopathic school), which are



situated in New York, Philadelphia, Chicago, Baltimore, Minneapolis, St. Louis, Cincinnati (where there are already two), and Atlanta. I visited some of them, especially the most celebrated, that of Philadelphia, of which I secured a photograph. It must be admitted that this is one of the objective points in a medical transatlantic excursion. The first of these schools was founded at Boston in 1848. It conferred diplomas until 1874, at which time it united with a homeopathic school. The second in date, and the one which is considered to be the type, the veritable mother of all the women's colleges, is the celebrated College of Pennsylvania, in Philadelphia, which dates from 1850; the buildings were reconstructed in 1875.

These schools are almost as well organized as those opened to both men and women. Certainly the courses, which only last for three years, are not brilliant; the entrance examinations are easy, the studies elementary, the examinations on leaving somewhat weak. But is not this true also of the regular schools? Besides, the women follow the studies with the greatest regularity. A little uncertain of their power and ability, they make so much the greater effort, as they desire to raise still higher the standard of their emancipation and to prove that they are fully equal to their brothers and friends in the rival institutions. They have, moreover, a solid elementary education, often even more solid than that of men (this is the rule in America), and have shown on different occasions that they were able to face the combat and to get out of it with all the honors of war. The corps of teachers is never composed exclusively of women. In Philadelphia about half the professors are men. In New York, Chicago, and elsewhere the proportion of women professors is still smaller. Hence it would seem that up to the present time the number could not be fully supplied from female physicians. But this is not the sole reason; other considerations lead also to the choice of men. These schools conferred in ten years (1880-1890) 635 diplomas, a respectable number, which indicates sufficiently how important a position women physicians have reached in the New World. For the exact total we must add to the number given the number of diplomas conferred upon women by other regular schools. As to these colleges, it is undeniable that the fruits have yielded what the flowers promised. In America, then, the female doctor is no longer an exception; in a few years, in the cities at least, she will play a part which is as yet only suggested.

The history of the schools called irregular is not less curious nor less interesting; and among these latter some are so near their end that those who desire to know their character and their method must visit them as soon as possible. In a few years, without doubt, it will be too late. The fraudulent schools exist no more. So far as I have been able to ascertain, they were constituted by medical associations, conferring doctors' diplomas for money. Their students had scarcely to follow the courses for three months. They had at one time, it appears, a certain success. This could be easily understood; but I do not guarantee the statement. Certainly all this is now a chapter of very old history, at least for the Americans, at the rate things move in their country.

The physio-medical schools number only two, one in Indianapolis, Ind., founded in 1873, the other, later, in Chicago. That of Indiana is the type of these institutions, which are on the decline from day to day. The conditions for admission are the same as in the regular colleges, and the courses are comparable, although still more elementary.

These schools, it appeared to me, were more elementary than those of the other classes. Instruction in them is rather theoretical than practical, and the clinic exercises are reduced to the most simple form. In fact, I am not prepared myself to give any particulars, on account of the short time I was in Chicago (the courses are finished at the end of June). Other French physicians who have crossed the Atlantic have not been more fortunate in this respect. If I may venture an opinion, I should say that these schools do not seem to me to differ at all from the others except in name. In America, where simple minds abound, where all is industry and commerce, it is often sufficient to change the denomination of a ware in order to



give it a greater value in the eyes of the public. I am afraid that it may have been the same with the physio-medical institutions.

The eclectic schools are more flourishing, but there are only 10 in existence, namely, at Cincinnati, New York, Chicago, St. Louis, Atlanta, San Francisco, Des Moines, and Indianapolis. These institutions differ from the regular medical departments of the universities and colleges of medicine by the nature of the courses in medical subjects, therapeutics, and internal clinics. But the difference is only on these points, as in the homeopathic schools.

In these schools all metals, without exception, are excluded from therapeutics, or, as the eclectic physicians say, iron, potassium, sodium, mercury, etc.—all this is of no value; only the substances taken from the vegetable kingdom, such as extracts, tinctures, alcohols, balms, etc., have efficiency. As a matter of fact, this is not true, because it is demonstrated that metals have great efficiency. But where religion commences, science must not interfere. I must confess that I had not time to examine this matter for myself, but from what I could learn there seemed to me less difference between an eclectic school and a regular school than between the latter and a homeopathic school. The homeopathic schools are more numerous and more prosperous. In 1893 they numbered 17, of which 1, in New York, was exclusively reserved for women. There were, besides, two post-graduate schools of the same class. I do not exaggerate in saying that these schools are as unknown in France as the eclectic or physio-medical schools; all our classics are silent on the subject.

These schools are found in most of the cities of the Union, in New York, Philadelphia—where are the oldest and most celebrated of those which exist to-day—Cleveland, Chicago, St. Louis, Cincinnati, Boston, Ann Arbor (University of Michigan), Iowa City (State University), San Francisco, Minneapolis (University of Minnesota), Kansas City, and Baltimore.

This is not the place to explain the homeopathic doctrine. It is well known in our country and by the readers of the *Scientific Review*. I will only say that the ideas of Hahnemann, which were given out about the year 1790, have, in less than one hundred years, conquered a good part of America. For almost a century, the homeopathic schools have flourished in these places of liberty. \* \* \*

The studies in these schools last only for three years; but there are many pupils. In respect to everything outside of therapeutics the best known of these schools are equal to the regular schools. It is interesting to note that sometimes, as in Iowa, Ann Arbor, and Minneapolis, the homeopathic school and the allopathic school are represented in the same university, and that, accordingly, many professors are common to both schools. There are only special professors for the courses of medicine and clinics. For instance, it is frequently the case that there is one professor of obstetrics, rhinology, or homeopathic chirurgy.

I have in vain asked myself what difference there could be between an accouchement or an amputation performed in this or that manner. I have tried to enlighten myself on this point and I could not find a solution. No one could help me in solving the problem. It would be very interesting to compare the extraordinary success which homeopathy has, and especially has had, for some years in America with the indifference which it has met with in our ancient schools of unquestionable standing. In Europe it may be said there are no schools of this kind. The physicians who devote themselves more or less to this profession have undergone the examination in classics before our faculties, and have instructed themselves in the doctrine and its applications in some hospitals of limited number and little importance. In the United States the homeopathic colleges confer diplomas which have the same value as those of the regular schools, and which enjoy indisputable consideration from the public authorities.

Taking all together and adding to the institutions we have already mentioned 10 preparatory schools or annexes of little interest, there existed in the United States in 1893 (I state intentionally the precise year, for probably in 1894 the number will be different on account of new creations or shipwrecks) 181 medical schools, of which

152 conferred diplomas, located in 68 cities. The territory of the United States maintains at present 70,000,000 inhabitants; this gives, in round numbers, a center of instruction for 400,000 inhabitants and 23,000 square miles. If one compares these numbers with those furnished by French statistics, it appears that we have one school for 1,600,000 inhabitants and 10,000 square miles. The Americans possess, therefore, four times as many schools as we in proportion to the number of inhabitants of the two countries.<sup>1</sup> This manifest excess is easily explained by the "liberty of teaching," and by the desperate competition between the schools. This explains, also, why in America colleges fall to pieces like castles of cards; become bankrupt sometimes after long years of financial prosperity and normal success. Within one hundred years more than 100 schools have gone down on account of this evident disproportion between the needs of the country and its means of production—between supply and demand. It is also one of the causes of the weakness of the courses.

In spite of this, in proportion as the unsettled regions become peopled, new centers of instruction will be created in the East and the far West. The average number of doctors furnished by each school seems also higher than that of the European schools. This proves that we exaggerate a little if we follow exclusively the statistical information in order to judge of the causes and the effects of this multiplicity of schools.

I could not learn the number of scholars who attended these centers of medical instruction in 1893, but I could get the number for the school years 1880-81 and 1890-91. They are eloquent enough to be quoted. In the year 1880-81 there were 11,864 students of medicine in the United States, of whom 9,750 were in the regular schools, 1,234, 826, and 54 in the homeopathic, eclectic, and physio-medical schools, respectively. For 1890-91 I noted in all 14,884 students, of whom 13,044 were regular, 1,128 homeopathic, 661 eclectic, 51 physiomedical.

It is evident that these statistics, which are very exact, permit us to make a fair conclusion in the sense indicated in this article. There can be no doubt that these regular schools are progressing. The increase of 3,000 students in ten years is a sufficient proof of this. It is, furthermore, beyond doubt that the irregular schools go down from day to day, that the physio-medical schools exist only in name, and that the eclectic colleges are not flourishing. As to the homeopathic schools, in respect to the number of students they make a good showing.

Let me add, also, that the surprises and the easy pleasantry of the beginning of my voyage gave way in time to something of pity and benevolence. In this dizzy course which America has followed in the matter of public instruction the whole nation has shown the resources of its indomitable energy, and especially its love for liberty. As wealth and power increase it appears that the ambition of the rich who have founded fortunes must turn itself toward the culture of mind. This is the right way. Let us congratulate America. The end is perhaps distant, but with the ability Americans have in overcoming distances it must be attained soon.

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<sup>1</sup> Chicago alone has 17 schools. At St. Louis there are 8 regular schools.





## CHAPTER VI.

### NOTES AND OBSERVATIONS ON AMERICAN EDUCATION AND THE EDUCATIONAL EXHIBITS, BY THE ITALIAN, SWEDISH, DANISH, AND RUSSIAN DELEGATES.

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CONTENTS.—“*Popular education in the United States,*” by Luigi Bodio—“*Education in the United States,*” by A. Ghisleri—“*Observations concerning American education,*” by Dr. E. Österberg—“*Studies on the educational exhibits at Chicago,*” by N. G. W. Lagerstedt—“*Notes in regard to the World’s Congresses,*” by Kirstine Frøderiksen—“*Some characteristics of the educational exhibit of the World’s Fair,*” by Eugraphie Kovalevsky.

#### POPULAR EDUCATION IN THE UNITED STATES.

By Signor COMMENDATORE LUIGI BODIO,

Director of the Royal Statistical Bureau, Rome, Italy.

I had the good fortune to visit the Exposition at Chicago during the autumn of the past year (1893). One of the most vivid and profound impressions made upon me during the fifty days passed in the States was produced by the prodigious activity among the people. What interested me especially, within the Exposition as well as without, was the organization of public instruction, so that to-day my intention is to say a few words in regard to the American elementary schools. The attendance upon the public schools is three times as great as in Italy. The number of persons enrolled during the year in Italy in proportion to the inhabitants is  $7\frac{1}{2}$  per cent, while in the United States the average attendance is 20 per cent. The countries of Europe which are the best supplied with schools stand between these two extremes. In France the enrollment in proportion to the inhabitants is  $12\frac{1}{2}$  per cent; the per cent is similar in Austria; in Prussia it is 18 per cent; in England and Wales, 17 per cent. The schools in America are housed in more spacious buildings than elsewhere; the salaries are greater than anywhere else, so that the expenditure for the public elementary school in America to each inhabitant is not only more than three times as great as in Italy, as is the case with the enrollment, but it is six times as great. Among the Italians the state, the communes, and provinces expend 62,000,000 lire (the ordinary and extraordinary expenditures included) for elementary instruction—that is, 2 lire (38.6 cents) per capita of the population of the Kingdom—while in the United States the expenditures amount to \$146,000,000—that is, 12 lire (\$2.31) to each inhabitant. Salaries of male teachers average 4,500 lire (\$838); of women teachers, 1,500 lire (\$675); the women form about 65 per cent, the men 35 per cent of the whole number of teachers.

The methods employed in carrying out the laws pertaining to obligatory instruction are dissimilar to those in America. In the city of New York 12 inspectors had charge of this phase of the school question, and it is no rare thing to see a police-

man (truant officer) who, meeting a boy upon the street during school hours, questions him as to his being a truant, conducts him to his home, and finds out the reasons for such absence; if it is found that he is playing truant, the justice of the peace disciplines him by placing him in a reformatory. \* \* \*

The rivalry between the States is such that each one desires to have the best school buildings, the best methods, the best text-books, and the best hygienic conditions, and the reports published annually by Commissioner Harris are a guide toward improvement in all directions. Anyone entering the American schools is impressed with the general cleanliness, the perfect order, and the sentiment of self-respect which pervade the atmosphere. The best arrangement of rooms, of windows for light, the best means of heating and ventilating, are studied. Then there are seats, one for each pupil, revolving chairs, slates, and blackboards, so that not more than two children work in close proximity to each other, and there is no crowding. The children by turning about on their chairs can direct their view to any part of the room. There is no need of hiding anything within the desks, and so the school, by the very arrangement of its furniture, becomes a means of forming a loyal character and of rendering the pupil alert, self-reliant, and respectful in bearing. Each school has a central room in which the classes congregate when entering and leaving. In silence and with a composed bearing, children of both sexes march along. The teacher leads the march by playing on the piano and a patriotic hymn is sung, but there are no orders given as to the marching. On entering and leaving school the same method is employed; girls to the right, boys to the left, is the mode of march. The sight was one that moved me greatly, as if it were a generous action for the honoring of humanity.

Truly, in the school is found the future of this wonderful people. I do not speak of the object lessons which are practically carried out in every school, and which habituate the children to reflect, to formulate thought, and to comprehend the matter studied. The elements of botany, for instance, are taught in such a manner that each child is supposed to form for itself a small herbarium. Rewards are not given at the close of the year to the pupil who has distinguished himself the most in his studies. There are examinations, however, if the teacher has refused promotions to the pupils, the parents may demand a formal proof, the examination being therefore a kind of court of appeals.

Drawing is an essential element of the primary school course, the students, both boys and girls, become first experts in drawing, then in reading, writing, language, natural history, etc.

Moreover, there are normal schools for instruction in drawing and the plastic arts; a remarkably fine one is found in Boston. Drawing is considered as a means of learning and of communicating thought, and not alone from its æsthetic side; drawing is, so to speak, an alphabet for expressing the conceptions. The children are taught to come forward and in the simplest manner to sketch on the boards celebrated men, figures from natural history and from political history, or, again, they may be asked to illustrate a poem, such as Longfellow's *Evangeline*. Another means of illustrating the lessons given is by the magic lantern, with which landscapes, colored pictures, etc., are thrown on the canvas.

Still another form of instruction is noticeable in America; this includes manual training schools, where the shops and the forge for boys, cooking and sewing for girls, alternate with lessons in history, geography, English, German, and Latin languages.

The elementary schools in general have eight years in the course. It can well be said that for the duration of the course, and for the methods employed in utilizing the time allowed, instruction is organized in the United States on a rational basis; more than this, it is liberal and democratic, as it procures for all a minimum of culture, which gives the people a high grade of cultivation as compared with many of the European peoples. The school is really the people's school, and the American

nation may well be proud of it. One recognizes at once how strongly the people feel in regard to the school question. In the educational department of the Chicago Exposition one of the Western States—Dakota, if I remember rightly—had pasted above the entrance “Education is the cheaper defense of the country.”

## EDUCATION IN THE UNITED STATES.

By Prof. A. GHISLERI.

### MUNICIPAL SCHOOLS OF NEW YORK.

The agreeable impression made upon a person visiting the schools of America is enhanced by the well-constructed, well-ventilated, and well-aired buildings. The number of such buildings would indicate that American architects had made a special study and established a certain type of edifice, thus solving the problem of simplicity and commodiousness in all respects, hygienic and pedagogic as well. In the school buildings, as in all public edifices, there is no Cerberus guarding the door. In some of the schools a bright, active youth fulfills the duties of custodian, possibly for the day, and conducts you without any formality to the gentleman or lady principal. In each room is a placard indicating the maximum of pupils who can be accommodated. This serves as a guide to teacher and pupils, and in case of an excess of numbers they refer to this in their appeal to the authorities. In the school which I visited 45 pupils was the maximum. The rooms are not large, for in New York the ground is costly, but they are high, and the heat and ventilation are modified according to wish. No room contains the long bench or desk, with the stationary seat, incommodious and antididactic, which is to be found in about 80 per cent of the schools of Italy, the secondary technical and classical schools included. In the cooking schools each pupil has her own seat and desk; in the other rooms two pupils are seated together. The desk is movable and inclined and permits the child's free movements; the seat turns on a screw, so that each pupil can move about from right to left as he desires without disturbing his neighbors and can bring himself into proper relation with the blackboard. The blackboard is not found resting on an upright frame, where it occupies space and intercepts the light, but the walls of the room are literally lined with these boards, and the pupil can draw his exercises upon the boards without disturbing any one of his companions, and they in turn can follow whatever the teacher jots down upon the boards by simply turning about without even incommoding one another. But for exercises in arithmetic, for drawing, and for such exercises as all the pupils ought to carry on simultaneously, there are slates in use from the first class on. Socratic and objective methods are in vogue, and by means of illustrations and exercises, in all of which the whole room joins, the teacher and pupils are, in a measure, carrying on a type of spontaneous conversation or interchange of ideas. Another valuable feature is that the teacher has no special chair or desk. In Italy such a desk is raised from the floor; but the American teacher moves about from place to place, and the arrangement of the revolving seats gives the pupils opportunity to follow him in whatever explanation he may be giving on the blackboards or by other means of illustration. I have every reason for believing that when I visited a group of schools on Greenwich street my visit was entirely unexpected, and yet I found the teacher standing before the blackboard, or in the midst of the pupils, all of whom were turned toward him, and it seemed as if I had interrupted an interesting dialogue in which all were participating. This method of instruction by moving among the pupils and conversing with them so engages the attention that it seems unnecessary to have any special means for keeping up discipline. The pupils, being visible from all quarters, have no opportunity or desire for concealment, and thus the school, by the arrangement of desks and chairs, becomes in itself an instrument for the formation of a loyal character and for the foundation of freedom of deportment.



Each school building has a central room, or hall, where the classes meet when entering and leaving school. From 400 to 800 pupils may come together there; it all depends upon the size of the school. The hall is so furnished with seats equidistant from one another that such a number of children find their places or leave the room with the greatest ease. The signal for the march is given on the piano, and two by two they fall into place, singing a patriotic air or repeating verses of a nonsectarian character, the girls to the right, the boys to the left, and march along to the entrance. It is truly an interesting sight, as if with their songs they were honoring humanity; and the unembarrassed and unassuming deportment of the American school children—always confronted me and led me to meditate as to the causes which brought this state of things about.

One thing which seemed to me essentially American is the fire escape, to be used only in case of fire. By these fireproof stairways the three to eight hundred children were supposed to escape in case of fire, and in each room a doorway led to this stairway. American forethought does not end there. It would be humiliating to indicate how many (or how few) schools in Italy, even in the most populous districts, are furnished with these means of safety. If an architect were to make such arrangement, the doorways and stairways would be absolutely hidden from the pupils' vision. But the practical spirit of the Americans goes further; it includes the practice (twice a month) in the use of these fire escapes; the signal given, the pupils move with the utmost celerity toward and down the fire escape, and in a moment are in the court or on the street. These movements are supervised by the teacher, and, oftentimes repeated, bring about precision and perfection of discipline. The parents themselves have less fear for their children, knowing that they are well drilled for such emergency. Here again another aspect of the American school impresses one, to wit, the courage inculcated and the quickness of thought necessary for any occasion.

There are no decorations in the class rooms, but in the central room, where all are congregated together, there are busts or pictures of Presidents of the Republic or other ornamentation. Atlases, diagrams, natural-history charts, etc., are not lacking in any school building, but they are not found in conjunction with the blackboards. These stand forth in their plainness, which is only broken in upon by the necessary door and window frames. In pedagogical fields, as in other fields of action in America, the effort is to obtain the greatest results with the minimum of means to such end. Geographic maps are closed up with wooden casings, each containing a series, so that they can be moved from room to room as they are wanted. They are so arranged that they can be hung up and opened to the map desired, while the other maps still remain encased. Pictures, models, and other objects required in the studies pursued are kept in cases, and simply placed before the scholars when needed. Thus one picture or model can be used in different rooms, and is kept clean and in good order. The pupil, too, does not have his attention distracted from day to day by these aids to study. In Italy these wall maps, etc., are always stationary on the walls. The pupil profits more by seeing these maps, diagrams, etc., only when needed for use, than if they were before him every day. \* \* \*

Some of the newer American cities, like Chicago, St. Paul, and San Francisco, have arranged their schools according to the very newest methods, and their programmes have theoretico-practical innovations in accordance with the latest pedagogical developments. In comparison with our Italian schools many comments and suggestions might be made, but I will limit myself to stating that in none of our scholastic institutions is the programme of study carried out practically from day to day as it is in the American schools. We have programmes, decrees, and regulations which are excellent in themselves, but even the ministers and Congress seem unable to carry them out, as, for instance, in the case of the laws of compulsory education. In America the regulations are few in number, precise, and clear, and they

do not suffer all sorts of changes and interpretations on the part of principals and superintendents, and these regulations indicate what is really carried out. Consequently one observes that the schools are really advancing more rapidly and earnestly than one would surmise from a mere reading of their programmes.

The public schools of New York and most of the larger and smaller cities are administered by a local school council. This council has different names (school committee, school directors, school commissioners, school board) in the various States and cities. The methods of electing the members, the number of them, and their duties vary also; still their aims are identical, inasmuch as they represent the wish and opinions of the people. Boston has a school council of 116 members, and this is one of the largest. In some States women are members of the school board; in other States their names may be used even if they can not be elected. A few cities have the members appointed by the mayor instead of being elected by the people. Among these is New York, which can not in this respect be regarded as possessing the genuine type of school organization of North America. Still this is the city which, through immigration and its commercial connection with other countries, is most affected by European influences. \* \* \*

The New York City school board has a superintendent as aid, who corresponds in part to the "provveditore general" of Italy. His authority, from the moral standpoint, is great, and he is generally a person of special culture, expert in educational affairs, and known to the public as of indisputable pedagogical and literary merit. \* \* \* The superintendent has manifold duties, which include inspection of schools, assisting at the examination of teachers, selecting educational apparatus, deciding in regard to repairs, revising accounts, making a report at close of the year, etc.

In order to correct an error which has been often repeated by men of culture, by ministers in Italy, and by Italian educational journals, it is well to state that the primary and grammar schools of the municipality of New York are gratuitous. The school tax (*tassa scolastica*), as it is referred to in some of the States, is simply a tax on real estate, etc., to be paid by all real estate owners, even bachelors. This tax is similar to the communal tax in Italy. The term "school tax" is used because the fund is raised for school purposes. But school registration is gratuitous in all the States. There is no tax [or fees] for entering on the courses, nor for examinations; and more, the city authorities in New York furnish books, pencils, and other needed articles to the poorer pupils, spending considerable amounts for the same. \* \* \*

Elementary education in New York State is obligatory, by law of 1875, for all children of 8 to 14 years of age, but in order that this law may not be a dead letter on the statute books (as it is often in Italy) 12 agents (truant officers) are paid expressly for the purpose of watching for children who are inclined to shirk school privileges, and to so notify their parents. If the child is incorrigible he can be sent to a reformatory.

In order to thoroughly understand public instruction in the United States it is necessary to state that, while the public schools represent a great factor in education, private institutions also add their quota to the cause. Among these private institutions are many aided by societies; those for orphans, provided for by the Children's Aid Society, some of which have special funds; others receive subsidies from and are under supervision of the municipality. In Leonard street I visited three Italian schools maintained by the Children's Aid Society. I found a fine four-story building made of stone and brick and situated near the Five Points district. This district is peopled by many of the Italian emigrants, and squalor and misery reach their very doors. Established in 1856, this school consisted of 40 pupils gathered together in a basement; it now has 700 pupils and is opened day and evening to children of both sexes between the ages of 5 and 15 years. In the evening adults receive instruction. The attendance is quite regular, except in the spring time, when many are obliged to



go away from New York to work. During the winter a midday lunch is given to the pupils and also garments, if needed. The society provides for newsboys or other youths who have no place to sleep. The programme includes studies from that of an infant school and a primary course to instruction in printing, domestic economy (cooking and sewing), while the elements of politics enter into the course in a study of the Constitution, and the pupils are taught to speak and write English. One of the teachers, an Italian, informed me that many Italians who hold excellent positions and are much respected were originally instructed in this school. This practical charity is entirely a work of Americans, and is so nonsectarian in character that many of the emigrants had images of the Virgin and of the Saints in the class rooms. Of the other two evening schools, one has 300 pupils from the Neapolitan provinces, and from all these schools the children are sent annually, if they need it, to rural districts or to the seaside for recuperation.

The schools of New York are open to colored and white pupils, who are educated together, and the former seemed as well behaved as the white children. Instruction is given in evening schools to more than 20,000 persons who are at work during the day. While there is often irregularity of attendance, the pupils seem to appreciate being taught.

Free lectures on hygiene, physiology, natural sciences, geography, description and travel, history, literature, and social science are given annually under the auspices of the board of education. The 200 to 300 lectures are given in half a dozen of the grammar schools on Mondays and Thursdays, in the evening hours, and were it not that it would lengthen this article too much I would like to give a résumé of some of the lectures, which in 1892-93 were listened to by 130,830 hearers. \* \* \*

In regard to teachers' salaries I desire to correct the erroneous impression which is entertained by many, that on account of cost of living in America a dollar may be reckoned as an equivalent for a lira (19.3 cents) in Italy. This is not true, for meat, bread, fish, sugar, coffee, etc., in fact the daily necessaries, are no higher, in proportion, in New York than in Italy. However, certain luxuries are more expensive. House rentals are not so much greater for the people who are not obliged to live in the centers of business in American cities; these rentals and lodgings average the same as equivalent rentals in Italy. The salaries of teachers permit them, however, to pay out for their own improvement (such as the buying of books, subscribing for periodicals, trips to teachers' associations, etc.) more than could be done in Italy.

#### IMPRESSIONS OF SCHOOL EXHIBITS IN CHICAGO.

The grand educational division of the Exposition at Chicago thoroughly confirmed the impressions of school life in New York. Here at the Exposition one could learn much of the rivalry concerning schools, methods, progress, and the sacrifices made to bring about such advance in all the States of the Union. This noble rivalry merited profound study from its psychological aspect, if it were only to discover the methods of this wonderful nation. I did not linger in the educational exhibits from Massachusetts and Illinois, two States which, as regards education, rival New York, but in those from the far West, which only about thirty years ago was like a desert entombed in prehistoric times, the eloquent result of whose progress furnishes one of the most characteristic presentations offered in the Exposition. The oldest of the far Western States is California, which may well be pleased with the statistics presented. \* \* \* The most important city in California, San Francisco, is reputed to have one of the most perfect systems of public schools, and it does not hesitate to consider itself a rival of the older cities, New York or Boston.

To pass to a State newer in point of development. New Mexico reports as follows in regard to its progress; the statement is modest in quality, but no less noticeable for the spirit and method displayed: By law of February 11, 1891, public schools were established, and a school tax for the construction of school buildings was authorized. From that date to December 31, 1892, there were 532 schools established,



557 teachers employed, 28,291 pupils enrolled, and an average daily attendance of 23,151.

It is well to say here that all the States presented educational information in the form of reports and diagrams or tables. Sometimes these last were printed on leather, with gilt figures. The American people, who are parsimonious in their bureaucratic expenditures, are very lavish, with an almost patriarchal tendency, in their expenditures for schools and schooling. There were frequently pictures and photographs of pupils taken during the lessons. Numerous were the photographic reproductions of school buildings, of the internal arrangements, of the grounds, of the picturesque localities in which the schools are situated. The newer States, that is, those which have most lately come into the Union, seemed to vie with each other in their efforts to make a fine school exhibit. Among the most noticeable exhibits, in point of externals, was that of Colorado. \* \* \* Most noticeable was the earnestness of purpose manifested in presenting a facsimile of the first schools established in the Territory, with a portrait of their founder and principal, and of the best-known teachers. To thus furnish a record of the humble origin of the schools in one of the last States to enter the Union surely indicated an intention of doing all that is possible to place it on a level with the older States. Colorado, with 412,000 inhabitants, has 65,490 pupils enrolled in its public schools and 7,072 in the private schools. \* \* \* This State has founded a magnificent normal school which indicates the serious intention of those who established schools to provide the best-trained teachers for them.

North Dakota interested me exceedingly. Its school exhibit had over the entrance, "North Dakota has 3,000,000 acres of fertile school lands." Various laws of the Federal Government have been the means of bringing benefactions in the shape of school lands; colonization and increasing value of such lands produce a school patrimony which the different States make use of for their schools. \* \* \* This State has two normal schools for the instruction of teachers, and in the exhibit it was noticed that the State had made use of the best that progressive pedagogical methods could suggest. For example, I noticed the application and use of drawing or illustration as a means of assistance in all lines of pedagogical endeavor. Glancing at a synopsis of Greek history, I found upon the first page a drawing of three columns with both shafts and capitals. These were not made for the mere presentation of a drawing, but to record an idea. These columns represented the three styles, Doric, Ionic, and Corinthian, and here, even before the children learned aught of their history, were three simple presentations indicative of the art and culture of the Greek people thoroughly impressed upon the minds of the pupils, and in a manner which they will never forget. They may become bankers, commercial men, clerks, dealers in pork, sailors, or agriculturists, and yet they will never fail to recognize nor even become embarrassed before any representation of Hellenic art, the nationality and style having already been brought clearly before them. What a number of useful things are recorded, as it were, from the association of ideas brought about by the grace and simplicity of the three columns drawn before commencing the work of a synopsis connected with school work.

A few pages further on was a map on which the rivers and mountains, and the various subdivisions were left unnamed and bore simply numbers which were explained at the close of the page. Still another chance for reflection! Not a word of geography to indicate what was intended, but simply blanks for the children to fill in or by word of mouth to indicate to the teacher the various places, mountains, rivers, etc.

The school exhibit from Minnesota was especially fine, particularly that devoted to St. Paul, which is cited as a model. Here was introduced a plan of throwing the object to be exhibited upon a screen by means of the magic lantern. Thus the pupils were trained to observe the correct coloring of landscapes, costumes, and general subjects, while the instructor gave explanations which made the subjects of

history, geography, etc., most clear to the pupils. In the normal and practice schools of Trenton, N. J., the geographical exercises were most noticeable; but some of the subjects under discussion in the normal schools will be spoken of elsewhere. The study of botany was most practical; the text-books used (Apgar's New Plant Analysis), after giving the requisite terminology and the general classification, presented a number of pages, partly blank and partly printed, which were to be filled in by the pupils after the plants were properly analyzed. The text consisted of the most simple explanations when compared with the complicated presentations in our [Italian] text-books. This can be thoroughly understood when one learns that the American school is founded essentially upon the instruction given orally by the teacher, who thus cooperates with the pupils in all grades from the lowest to the highest. In addition to this, the pupils have blank books in which they draw well-known plants and flowers from nature. \* \* \*

I studied at some length the object lesson and the methods employed in normal schools, so as to become thoroughly imbued with the system and spirit dominating in these important institutions, the graduates from which to become teachers in primary and grammar schools—that is, in the people's schools of the United States. The woman teacher commences always with a drawing, if she has a special object to present to her pupils. Thus, at the same time that she is explaining the lesson she brings before the pupil an illustration placed on the blackboard, which illustration serves to conduct the pupil by degrees through the intricacies of quantity, space, and time (i. e., in arithmetic, geography, and history), if she is conducting a special lesson in these subjects. Similar lessons actually take place in the practice schools connected with the normal schools; the pupil teachers point out the observations which they have made during the lessons, and it is curious to observe in these compositions or synopses what caused the greatest embarrassment and difficulty to the pupil students. Observations and questions put to the teachers are also included in these books. The teaching is Socratic and experimental.

In a volume of compositions I read three concerning a "Comparison of the local government in New England and Virginia," and, as a result of my curiosity, I am firmly impressed with the fact that the Americans are thoroughly persuaded of the superiority of their local government. As additions to the history lessons there are pictures of the house of William Penn, in Philadelphia (if he is the subject under study), or of General McClellan (if the campaign of the James River is under discussion), united to topographical illustrations of the principal events of that campaign. This method of illustrating the subject under study is universal in America.

\* \* \* In the same school volumes of art pictures were displayed \* \* \* which contained reproductions of the most celebrated painters, Michael Angelo, Raphael, Giotto, Rubens, and of the most distinguished sculptors. This seemed to me a most excellent idea from the educational standpoint, because such a collection served to inculcate knowledge, to train the eye, and to contribute to form good taste. \* \* \* As a continuance of this there were historical scenes and pictures of persons, the dates alone being given. The physiognomy and the general type are supposed to be enough to indicate who the personages are. Even upon the base of the public monuments erected to statesmen or generals of the Union it was rare to have the names given. As specimens of graphic art, I was not favorably impressed—in fact, I was amused at first, for it seemed to me that this was intended as a joke to pass away the time, and that as scholastic work it was lacking in historic precision and æsthetic taste. But when I came to reflect upon this matter, and when I recognized that this was not the result of a teacher's hobby, then I began to understand the general underlying principle, and that the intention was not to make an art study, but that the exercises had an entirely different scope. To-day in America, drawing for the purpose of illustration is an indispensable part of instruction.

The study of fine arts as such is very different from the drawing or illustration which becomes, as it were, the basis of universal elementary pedagogy. In this our



inferiority appears, for, proud inheritors of classic civilization, we regard drawing as a means of illustration, to be an art reserved for only a few vocations, and we only recognize instruction in it as an immediate end toward some professional, industrial, or æsthetic occupation. But in the American schools drawing has the same value as the alphabet or writing, and as all pupils, even if they do not wish to follow a literary profession, must know how to use alphabetical characters in order to signify their ideas, so they must know how to use that other universal language, drawing, as a means of expression. This is the reason, then, that from the kindergarten upward all children have to draw in the simplest manner such objects as surround them, domestic animals, flowers, machinery, buildings, maps, the plan of a city, portraits of eminent men, artists, and patriots. It is not of so much importance whether the drawings are well done, whether they are done by pencil or crayon; the main object is that they serve to make an impression on the mind. Thus, like the alphabet in its conditions, they form a language of which all can make use. It is easy to comprehend that with these sketches, made as an aid to the study of geography, history, natural sciences, the Americans, following out a child-like instinct, succeed in diverting themselves by illustrations, so that the school is not only advantageous from this standpoint, but has its amusing side. By means of this method the images or representations of men, facts, deeds, etc., are impressed upon the memory so that they will never be forgotten. And as all things are linked together in this fashionable and working world of America, so, after having investigated many school documents, I was not surprised to find at the World's Fair every day, especially in October, girls and boys, both morning and evening, drawing in their copy books representations of whatever they saw which interested them most, and which they wished to retain in the memory. Naturally, this universal application of drawing has special tendency toward the schools of arts and trades, but to enter upon a discussion of that branch would extend this essay to an undesirable length. \* \* \*

Liberty and variety! Thus may be described the pictures, drawings, etc., on the walls of the technical schools—figures, animals, landscapes, copies of other pictures, all free-hand work. Nothing conventional! No drawing which had not been brought before the senses, which was not a reality to the pupil. Such is the character of the American school in divers forms of instruction. The themes given for discussion in the high and normal schools seem to me to follow the same general trend. Real live topics are given. I write down a few: "The crisis in France," which strange title induced me to read two or three compositions to see whether "the Panama scandal" or some other subject had been discussed by these pupils of 15 to 18 years of age. There was no attempt at rhetorical effect, but simply a collection of facts, which immediately led me to wonder whether the students had read journals and reviews on these subjects, or whether they had closely watched the politicians of the country of which they were writing. As for the comments made, they attributed the facts of the Panama scheme to the excess of confidence which the people had in Ferdinand de Lesseps, and to the fact that a privileged few (privilegi) had control of that undertaking. The impression made upon me was almost puritanical in its monitions, for it implied that there must be no deviation from the severity of the laws toward any citizen. Other subjects discussed were: "The banking question," "Should the World's Fair be opened on the Sabbath?" "The silver question." These live questions, treating of the politics of the day, of the functions of public officials, were discussed in the public schools, and were a part of the system of that education which forms the youth to be a citizen and prepares him for practical life. How different that is from the passive, conventional, traditional, and bureaucratic type of our [Italian] schools, where the individuality of both pupil and teacher is held in abeyance.

There are many other observations which I would like to jot down, in order to demonstrate the liberty accorded to the teacher in the American school, and to



point out the progress and efficiency attained by the methods employed in the American school. But the system is so different from the Italian system that it is difficult to present the subject in a few words. I shall be glad if these few notes be the means of inducing others, more competent than myself, to make a profound study of the society and institutions of that young continent, which in so many particulars has already to-day placed itself in advance of the older European civilization.

#### OBSERVATIONS CONCERNING AMERICAN EDUCATION.

By Dr. E. ÖSTERBERG (of Sweden).

The observations recorded in the following pages were made on a trip to America during the summer of 1893. Dr. N. G. W. Lagerstedt and myself were commissioned to examine the educational section of the great exhibits at the World's Fair in Chicago, and to take part in the pedagogical congresses.

Dr. Lagerstedt has given an account in this journal<sup>1</sup> of these congresses, so that I limit my remarks on that subject. The discussions in these congresses proved that there is a great deal of vitality and interest kept up among American teachers, and that pedagogical questions are generally and earnestly studied. I may also mention that American women took a very prominent part in the discussions of the congresses, a natural feature, since the teachers of the United States are largely women, who are recognized as teachers even in higher schools and universities. Some of the most impressive discussions, especially those relating to moral instruction in schools and coeducation, were conducted by women. Another noticeable trait is the harmony apparently existing among the teachers, without regard to the higher or inferior positions occupied in the school. The congresses took into consideration all the various stages relating to instruction, from the kindergarten to the university, and the separate departments conferred with one another through their respective representatives of higher and lower instruction. The questions predominating in the daily programme of the pedagogical discussions were those relating to the training of teachers; to promotions from the high school to the universities; to the importance of the classical languages; to coeducation in colleges and in the universities proper. In the schools which correspond to our people's schools and in the higher grades of common schools (*allmänna läroverk*) coeducation is definitely settled and not further discussed. Moral education of the young and, finally, the best mode of bringing the law on obligatory attendance into full effect were also discussed.

The division of the World's Fair devoted to instruction and education was principally placed in the Manufactures and Liberal Arts Building. In this immense building the larger part of the gallery was assigned to educational exhibits. Some of the American States, like Illinois and Washington, had noteworthy educational exhibits in their own State buildings; and in the Woman's Building education and instruction occupied a prominent place.

Several European countries had material of exceptional value. Even far-distant Japan and Brazil made themselves felt in the field of education. In the department of Brazil my attention was attracted by a very fair collection of work from manual training schools, according to the methods employed at Nääs. The exhibits of France, Russia, Germany, and the United States, however, were the most noteworthy. Germany had a very complete and well-arranged exhibit of its school system, from the people's schools to the university. Here one saw an abundance of material for instruction in natural sciences, geography, and history; collections of educational programmes and text-books, pupils' work in manual training, etc. Elaborate accounts of the German educational system, which had been prepared for the Chicago Exposition, were distributed in print.

<sup>1</sup> Reprint from *Verdandi*, 1894.

The United States exhibits were also very imposing. Nearly every State had a spacious section in which were found neatly arranged specimens of pupils' work in all the various educational branches, with an abundance of reading matter, of feminine handiwork, manual training work in wood and metal, from the lowest to the highest stage of instruction. As a distinctive feature we mention that several schools (those of Omaha, Nebr.) reproduced their school songs by means of phonographs. Even the universities were represented by scientific work furnished by their teachers and post-graduate students; also by accounts of their work and by photographs of their buildings, study halls, collections, etc.

The States further distinguished themselves by their very excellent literature, mostly prepared for the occasion in the form of annual reports. These publications contained numerous engravings of the study halls, the appliances and material for instruction, etc. They also included reports of school inspectors, which reports often extended into pedagogical dissertations. The plan laid out for my journey included the study of the methods of instruction in American schools. Unfortunately I arrived too late for this purpose. In Boston and in Harvard University, however, I had a chance of attending some closing exercises. To judge by a few of my observations, I think that America has developed methods that well deserve a closer examination. An extended and thorough study would be very instructive, especially in regard to instruction in the mother tongue, also in geography, history, and political science, citizenship being connected with this as well as ethics.

It is natural that the schools of so many States should differ greatly in respect to quality and organization. However, the general trend of their development shows that they approach the system of the Northeastern States more and more. Here schools of dissimilar standing and organization have sprung up, which at the present time form a more or less complete system. As an example I cite the school system of Boston. We find there kindergartens, primary and grammar schools for children up to 14 years of age, and high schools with four classes for the ages from 14 to 18 years. Next above these are colleges and universities.

I wish first to call attention to the gradual extension of kindergarten work all over America. The sessions of the congresses devoted to the kindergarten system were attended by large audiences, and the work furnished by the little ones occupied a prominent place in the exhibits of the separate States. Daily lessons were given at different places in kindergartens in operation within the World's Fair grounds, and these attracted the greatest interest from both children and adults. I have observed the same facts in England, where the kindergartens are highly appreciated. With us in Sweden a certain prejudice against kindergartens exists. This may be because this method is easily carried to extremes, and a groundless prejudice against "Germanism" prevails. But it is evident that in education there are no leaps; education should commence in infancy, should be well regulated for each age, and, in a well-managed kindergarten, training for the little ones should be obtained. How many parents understand how to carry on this training, even if they are willing and can devote their time to it? And how much could be done at an early age for the purpose of developing the talents of a child?

"Take the child into the kindergarten and there begin the work of physical, mental, and moral training. Put the child in possession of his powers; develop his faculties; unfold his moral nature; cultivate mechanical skill in the use of his hands; give him a sense of symmetry and harmony; a quick judgment of numbers, measure, and size; stimulate his inventive faculties; make him familiar with the customs and usages of well-ordered lives; teach him to be kind, courteous, helpful, and unselfish; inspire him to love whatsoever things are true and pure and right and kind and noble." Supt. J. L. Pickard, from whose book, *School Supervision*, I have taken these citations, says: "The importance of this preliminary work can not be overestimated, nor should the State depend upon private contributions for so necessary a work." In New York and Boston the kindergartens are incorpor-



ated in the public school system, and this will soon be the case in most of the States. There are numerous private kindergartens in operation everywhere.

Before I report my observations relating to the instruction in other grades I will call attention to the inferences under which it is conducted. The schools I visited in Boston, for example, made a very pleasing impression by their airy and light architecture. This impression was not lessened after having inspected the interior of the buildings. Statues and mural tablets decorated the corridors, stairways, and study halls. When visiting an American schoolroom, decorated with mural tablets, photographs, large charts, wall pictures, and bookcases, I found myself desiring to become a student. According to my idea, these pleasant surroundings must produce a very beneficial influence upon the schoolboy. It may be said that he becomes so used to these pictures, etc., that they no longer attract his attention. But why then do we decorate our homes and endeavor to give them a cozy appearance? The artistic impression produced upon the mind and soul of the children at school and at home by these externals is by no means insignificant.

One excellent feature in the American mode of instruction seems to be the endeavor to make it as illustrative as possible. The blackboard is much used, and in the schools I visited in Boston the walls were supplied with blackboards all the way around the room. I have frequently observed the same feature in England (also in the new elementary schools of Stockholm). But the work of the school children at the Fair showed that the pupils are taught and encouraged to reproduce their ideas at an early age by means of drawings. This is especially noticeable in the teaching of natural history and geography, and in teaching history and the mother tongue. I have seen maps drawn and colored by pupils of all ages, from the first attempt of children 8 to 10 years old to the artistically finished production furnished by the higher classes. It was a delight to see the charts prepared by pupils of the Cook County Normal School. Many of these maps, made by pupils of the lowest grades, doubtless gave great pleasure to those who prepared them. Grain, spices, pieces of iron, charcoal, cotton balls, etc., had been used to indicate the various products of the States or Territories. This kind of work is supposed to inspire the child with special interest and to awaken his self-activity. In addition to physical and geographical charts, there were others indicating the products of the different countries; also maps and globes with light outlines to be filled out and completed with chalk. Excellent stereoscopic pictures were also exhibited. The text-books are good and instructive, especially those in geography, with their excellent pictures and maps. My attention was called to a kind of historical chart (Linton's Historical Chart). Instead of the usually dry and dreary aspect of chronological wall tablets, these seem to invite the pupils to make investigations and inquiries, and are of great help in memorizing. The history of the world was represented by pictures in chronological order upon large wall tablets. To illustrate the middle of the eighteenth century, for example, Clive in India, Franklin with a lightning rod, the journey of the youthful Washington to the French forts in North America, etc., were represented. One can well imagine how the interest and attention is increased in a class where such resources of instruction are drawn upon. It hardly need to be mentioned that exceedingly fine charts and pictures of all kinds for instruction in history, geography, and natural history were exhibited in the German section.

Another feature to be pointed out is the diligent application of pen and paper at the examinations in all school studies. To be able to express one's self correctly, both orally and in writing, is considered to be a very important feature. Each pupil is led in this manner to think out the problem to be treated, and his answer will be more accurate than if left entirely to the method of oral instruction. Written answers are required, not only at the examinations and for promotions, but time periods are set apart for this exercise even during ordinary lessons. In this manner the lesson does not remain one incessant examination or recitation. The written



answers give more accurate knowledge of the conception of the teacher's oral communications and at the same time require pupils to furnish independent and individual work. Complaints are made that the teacher's work is greatly increased by the necessity of correcting all these written lessons. As answer to this it is stated that the teacher does not correct the work of each pupil, but certain answers are selected and discussed before the whole class. No stress seems to be laid upon the correction of each separate mistake in the written exercises. Each copy book is not required to be treated like a proof sheet ready for the printer. The exercises are the means by which the pupil develops his faculty of self-activity, the means to find out the standpoint of the pupil and of the class, a mirror, as it were, in which the teacher sees the shortcomings or merits of his own work reflected.

It is quite natural that these exercises should have a favorable influence on the versatility of the pupil in using the mother tongue. This brings me to the subject of instruction in the mother tongue in American schools. From the conversations I had with teachers, from the text-books I read, and from the written exercises of the pupils, I learn that Americans are wide-awake in realizing the immeasurable importance of education in this line. I observe that children, even in the lowest class, are given short compositions, so that they may make instant use of the little they have learned. It is, indeed, a great science to conduct instruction in this manner. Yet this science they try to develop in America. Some simple opinions are formed at an early age; short descriptions of a few lines on daily topics are made, and later these topics are discussed before the class. A letter is dictated, and the child itself writes the answer to it. An advertisement is read and the pupils answer it; or are told to write an advertisement; for example, to recover what they pretend to have lost. A picture is shown and the pupils state their view of the subject represented by the picture; or, if more advanced, they prepare an argument of what may have happened before or after the period of the scene given. In the copy books of the older pupils I noticed a secretary's book of minutes of a board meeting, etc. The questions of the day are diligently discussed. "The bad streets of Baltimore," "Compulsory education," "The Hawaiian question," "Should the World's Fair be opened on Sunday," were some of the topics treated in the composition books of the highest classes. I am not able at present to go into further details of this question, but will add that a study of American text-books in regard to the native tongue would certainly offer many suggestions to our teachers. \* \* \*

The number of lessons devoted to the mother tongue differs considerably, but as a rule it seems that a great many hours are devoted to this branch, even in the higher grades. In the Boston high school, for example, the English language is studied during the larger part of the year four hours a week in the two lower classes, and three hours in the two higher classes (third and fourth year). It must be observed that in the fourth class, which has very few regular studies, English literature takes an important place among the optional studies, and thus language receives two hours more during the week. It is very evident that the reading of literature is encouraged. In the schools I visited each class had a separate bookcase, a handsome ornament in the study hall. The book collection, consisting of selected literature and adapted to the age of the class, is in care of the class teacher. Reference books for the use of teachers are also found there. The subjects treated in the compositions bear witness that the books are really read. "What I have learned from Ruskin," "A half hour with Wordsworth," and similar topics, seemed to have been handled by preference. The pupils also acquired great versatility in oral rendition. It was a pleasure to listen to the young girls and boys at the examinations in Boston, which, as I mentioned before, I had an opportunity of attending. We have frequently heard of the independent manners of Englishmen and Americans in public life, and I had fair opportunities of observing this fact. No matter if the subject discussed referred to "The refraction of light," or "The structure of the dactylic hexameter verse," or "The character of Æneas as exhibited in the first six

books of the *Æneid*," or a "Secretary's report of an English recitation," one was always agreeably attracted by the free and easy manner with which the subject was discussed, the speaker being aided by only a few notes. This universal faculty of unaffected and correct expression I observed frequently at the congresses in Chicago.

Speaking of instruction in the mother tongue recalls some observations made while studying the German compositions of graduating students (*Abiturienten*) as seen in the German exhibit at Chicago. In our country, says Dr. Österberg, I have frequently heard pupils, parents, and teachers express their uneasiness when the graduating compositions had to be written. This uneasiness does not originate from a doubt of the pupil's ability to use the mother tongue correctly or to arrange the compositions logically, but from fear that the subject may be of such a nature that the pupil is not sufficiently familiar with it. To be sure, these topics are selected from the material which the pupil has gone over during his school years, yet a long time may have elapsed since he heard or read anything relating to the subject, and it may happen that these very points were never treated thoroughly enough to give him any essential facts to write about. It is not easy to write when material is wanting, hence these compositions often display loose and unsatisfactory arguments and are wanting in style. In Germany the teacher reads off three subjects, which he knows the pupils to have mastered, and then a higher authority determines the subject to be given (another topic may be selected, if necessary). In the proceedings of the "*Abiturienten*" examinations in Breslau, for example, the teacher announces that Goethe's "*Iphigenia*" has been read, and proposes the following themes: "What ideas do the prayers of *Iphigenia*, addressed to the Gods, convey of her character?" "A noble man is greatly influenced by a woman's good word. How is this proved by *Thoas*?" "In what manner does *Pylades* show himself a special friend in the hour of distress?" The first of these was chosen. The compositions indicated thoroughness and ease of treatment, which might be expected from thorough knowledge of the subject. In England and America the pupil sometimes knows, several years in advance, on what authors and works or on what period in history the questions will touch. \* \* \*

These requirements prove that studies in the native literature are promoted. I have observed that, as a rule, the educated classes in England and America have a more thorough knowledge of their own country's authors and their work than we find in Sweden in the same circles. Undoubtedly the interest with which libraries and the science of collecting books and arranging libraries are fostered in America may be one cause of this. Public libraries, and reading rooms connected with them, are considered almost indispensable in every advanced American community. It is not so well known that several schools have been founded and that departments in colleges have been established to disseminate a knowledge of library work and to give pupils an idea of the practical side of library questions. These schools have organized the exchange of books and made them accessible to the public in a most practical manner. \* \* \*

But more is needed than the mere establishment of libraries; one should also stimulate a desire for reading and a taste for the pure enjoyment found in consulting good books, and I have reason to think that this will be brought about by school instruction. The possibility of calling forth a love for reading and the literature of the fatherland exists already in the fact that the mother tongue occupies so important a place on the school programme and in the methods employed. It must be remembered that the programme includes a small number of studies, and that the school does not take up all the time of the pupils. The first section of the Boston high-school regulations reads: "The school hours shall be five each day, five days a week." Of these, four hours for recitation and for study are set apart for the pupil's individual work. Twelve hours a week are assigned for home work. Under such conditions the pupil has leisure to take interest in a more thorough study of the master works of the literature of his native country.



A question that greatly occupies the pedagogical world of the United States is that of the training of teachers. In a country where such numerous changes take place among teachers, and where new schools are constantly erected in large numbers, this must be a very difficult problem. But the difficulties stand out clearly before their eyes, and they struggle with all their might to conquer them. Some of the teachers are trained in the so-called normal schools; but these can not supply the schools with the requisite number of new teachers. Most of the normal schools seem to rank with the high schools, but the instruction is given with special consideration for the student's future occupation as a teacher, and courses in pedagogy are given also. In this manner, however, only kindergarten, primary, and grammar school teachers can be obtained. Teachers of the high school, who usually pass through a college course, or take a degree at a university, rarely have a pedagogical training. To accomplish this, however, is the desire of America and England, where at this moment lively discussions are carried on in regard to "secondary education" and the training of teachers for secondary schools. This discussion was brought about by a bill that had previously been considered in Congress. In the meantime, and this I wish to bring chiefly before the public, the study of method in education and instruction is encouraged in every part of the United States, and pedagogy is by no means disdained. Some of the normal schools seem to have raised their standard far above others, and comprise among their students persons who have even passed a university examination. The State Normal School of Michigan, for example, grants degrees in pedagogy. The degrees of bachelor of pedagogy and master of pedagogy are granted to students who, after a complete course at a normal school, or examination for admission to a university, devote one or two years more to pedagogical studies and write a treatise on that subject. Several universities have separate chairs for pedagogy. \* \* \* That the teachers of America were well versed in the theory of pedagogy and history could be observed at the deliberations of the international congress. An English woman, a teacher, who during the summer took part in the congresses, mentions an utterance made by an American teacher in one of the section meetings: "We all acknowledge a certain philosophical system underlying all education. How many English teachers," she added, "are familiar with philosophy of teaching?" And we Swedes may well have reason to ask the same question.

The difficulty of obtaining efficient and well-trained teachers has brought about the natural result that school supervision plays an important rôle in the United States, especially the so-called State supervision, which is carried on by one inspector in each State for all schools. School superintendents like Horace Mann, Henry Barnard, and William T. Harris have had unprecedented influence on the development of the American school system. Since the years 1830 and 1840 they have, as it appears, been indefatigable in promoting the interests of education in their own and other States, and by advice given to individual teachers, through teachers' meetings and lecture courses, and through their valuable and extensive official reports, they have exerted influence upon lawmaking bodies, boards, and councils.

One institution which originated in this manner is the so-called teachers' institute. \* \* \*

In connection with these there are reading circles in which certain books are studied by each teacher in the course of the year and then later are discussed at stated meetings. Summer schools are also held at the normal schools previously mentioned. \* \* \* Even Harvard College has a summer school for teachers. These institutes also include the courses given at Chautauqua, which are connected with reading circles during the remainder of the year. The Chautauqua system has given rise to a number of similar institutions all over the Union. As another example of how opportunities are offered to teachers to avail themselves of the experience of renowned colleagues, I refer to a paragraph of the school statutes in Cleveland, according to which opportunities are offered each teacher to visit other schools on certain days.



Especially numerous are the pedagogical societies and teachers' associations. These frequently issue publications of their transactions. There are a great many pedagogical journals in America and some of them rank very high. The National Educational Association, whose proceedings are of great importance, and under whose auspices the international congress was held last summer in Chicago, issues annually a volume containing a full account of its proceedings. These large volumes are a veritable mine of instruction, and offer pedagogical reading matter of no mean character. Among American educational writings, the reports of Messrs. Mann, Barnard, and Harris, previously mentioned, most assuredly take the lead, as do the journals edited by these eminent educators. The valuable publications issued by the United States Commissioner of Education should be included.

To judge from the interest displayed in pedagogy by American teachers, by the highest officials of schools and universities, as well as from the importance the public bestows upon school education, and the sacrifices made in its behalf, one must expect fair progress in future within the province of education. My opinion is that a thorough investigation of the United States school system and a profound study of the schools in operation would bring to light various instructive details worthy of imitation.

#### STUDIES ON THE EDUCATIONAL EXHIBITS AT CHICAGO.

From a report by Dr. N. G. W. LAGERSTEDT, of Stockholm, Sweden.

[Mr. Lagerstedt was commissioned by the Swedish government to visit the Exposition, and was required to make a report to the department of worship and education. He left Stockholm in June, 1893, and after visiting the United States Bureau of Education proceeded to Chicago, where he remained until the middle of August. He gave particular attention to the educational exhibits, took part in the educational congresses, and visited some of the educational institutions in Illinois and Minnesota.

In his opinion, the German exhibits were the most important after the American, but other exhibits are mentioned. After a short notice the author passes on to a more detailed and minute account of American schools. He begins with a brief review of the public school system of the United States, and notes the effect of independent management by the various States, but points out the fact that there are still certain leading features common to all schools. These features are then discussed, and the schools of Columbus, Ohio, and Tacoma, Wash., taken as characteristic of certain types. He finds that the public school system of the United States corresponds to the secondary schools of Sweden, but is inferior to them.

Normal schools are then considered, as is the preparation of teachers and their characteristic weakness in America. After a few sections devoted to the United States Bureau of Education, the powers and functions of State boards of education and city school boards are considered. The next few pages are devoted to American universities and colleges, to the higher education of women, and to expenditures for education. After this general introduction he begins his study of educational questions as follows:]

\* \* \* The largest proportion of the United States school exhibit consisted of pupils' work. This is probably due to the fact that the school children of the United States, more than with us, devote their time to work that leaves visible results—to productive work. The latter includes short compositions in the mother tongue, besides penmanship, written exercises in spelling, arithmetic, drawing, painting, manual work, modeling in clay, natural-history collections and other work, map drawing, relief maps, kindergarten work, etc.

The exercises in the mother tongue seem to me especially noteworthy. These begin, in Columbus, Ohio, during the latter part of the first year of the primary school (pupils of 6 years). The children, for example, fill blanks in sentences, using words from a given list. During the second year the pupils express their ideas, first verbally, then in writing, on some object or action observed. They describe simple pictures, and toward the end of the year write short letters or repeat in writing subjects that were discussed during lesson hours. In the third year (at first daily) written opinions and short compositions on general topics within the comprehension of the pupils are required; then further descriptions of animals and plants, and of actions, letters of greater length, or narrations with certain words interwoven. The

regulations for the fourth year prescribe the reproduction of short stories from American history, read by the teacher; also, descriptions of animals, plants, scenes, etc., narratives of journeys, accounts of picnics, etc., and letter writing. At times the pupil may choose his own subject and relate things that interest him. For the fifth year, or the first of the grammar school (pupil's age, 10 years), there are prescribed, among other things, descriptions of current events, or of more extended trips made by the pupil, and compositions on subjects taken from natural history, physiology, the science of hygiene, or other branches taught in the school, or on general topics of interest in city and country. The compositions are furnished in rough copy, and after correction are rewritten. This year's work includes stories from outlines, writing from memory, and original work. During the two following years, the sixth and seventh, nothing new seems to be added in this line. During the seventh year a written exercise is required once a week. For the eighth year, short letters, business accounts, short historical and biographical sketches, in accordance with given outlines. No separate courses for written work are prescribed for the several classes of the high school.

The foregoing courses show that these written exercises are introduced much earlier than with us. As they are continued throughout the whole school course, parallel with oral exercises of a similar nature, it is very evident whence proceeds the remarkable skill of American school children in writing and speaking their mother tongue.

Furthermore, attention must be called to the practical character of the written exercises. Letter writing occupies a prominent place, and careful attention is paid to the common rules of heading, closing sentences, and signature, folding of letters, and addressing. Special training is observed in drawing up business letters and similar composition work. For purposes of a more practical character we may also mention such as describing current events, for example, public festivals, etc.

One kind of exercise often resorted to is certainly very appropriate; it consists in describing a picture. Such exercises are commenced at a very early stage. The pupil is given a small colored picture, which is pasted on paper, and then he states what it represents. The following may serve as an example;<sup>1</sup> it was written by a little girl 8 years of age:

"Mary and her lamb. There are a little girl and a lamb in the picture. The lamb is jumping through a hoop. There is a boy by the well. There are two trees; I can just see their leaves. There is a seat between the trees. There is a boy leaning against an old-fashioned well. There is a bucket by the well. There is a rolling stick on the ground. There is an old country fence. There is a house behind the fence. I can just see the top of the house. There is a rock near the little girl's foot. I think it is summer, because the little girl has short sleeves. The little girl is laughing at the lamb."

Writing of this kind was also presented in the French educational exhibit at the Chicago Exposition. Among written exercises of pupils many could be found that were connected with drawing exercises. A plant, or a part of a plant, an animal and certain parts of the same, a physical apparatus, etc., were drawn, frequently even colored, and described. Some examples derived from a high school in Pittsburgh may be mentioned. A paper with the heading "Study of a crab" represented this animal, with illustrations of separate parts and descriptions. A sparrow was pictured and described in the same manner. Another exercise, "The growth of maize," consisted of illustrations, mostly colored, and representing maize in different stages of development from the growing seed to a full-grown plant. In another composition a fruit-bearing branch of a cherry tree was seen, illustrated and described. Another showed a colored india-rubber leaf of natural size, with description which read as follows: "This is the leaf of an india-rubber plant; the princi-

<sup>1</sup>Not being personally in possession of a copy, I have taken this from Buisson, *Rapport sur l'Instruction primaire à l'Exposition universelle à Philadelphia*.



pal parts are the blade and petiole; the margin is entire. The shape is elliptical, the apex is acute, the base obtuse, the surface is smooth, the veins are paralleled costal, and the texture leathery."

Sometimes, instead of a drawing, a pressed specimen of the plant treated was fastened on the paper. In this connection I mention that at examinations the answers to the questions are mostly given in writing. To what an extent this is done in different cities and places I am not able to say. This method of examination has no doubt advantages which are worth considering. The similarity of questions addressed to all pupils will cause more correct answers; the questions are considered more carefully; the answer is given with greater composure and caution; and the result of the examination depends less on mere chance. This method is also carried on in England to a large extent, from the lowest classes of the school to the university and governmental examinations. My opinion is that this method of examining deserves to be introduced in our schools to a certain extent. It certainly would be practical in the higher classes of our secondary schools in connection with oral exercises in mathematics. The experiments which I made when an inspector at the normal school for higher grade women teachers brought out the good features of this method. First and foremost, it is of great advantage in grading the certificates that there should exist a written evidence of the student's efficiency. In most instances it happened that the examination agreed with my previously formed judgment in regard to the student's ability. Sometimes, indeed, a student, through the accuracy and keenness of her answers, showed herself worthy of a better rating than I had hitherto awarded her. Yet I do not remember any case in which a favorable judgment of mine, previously arrived at, was ever set at naught after inspection of the written answers. At times, of course, I became assured on one point or another where I hitherto had been undecided in forming a final judgment. However, to permit the results of written answers to solely influence the certificates or opinions at an examination would be entirely out of place. Oral examinations give the examiner an opportunity to see the examinee in a different light from that in a written examination. It seems best, therefore, to have both kinds, if possible. For that purpose one might submit questions for written answers different from those used in the oral examination. For one pupil it may be easier to express himself orally, while another pupil is more able to state his ideas in writing. It is no more than just that each should be afforded an opportunity to show his ability in the best light. It is preferable to make an examination as many sided as possible. With this end, one might propose questions differing in nature, so as to bring out the individuality of the student in his written answers. Besides, some of the questions may require only a brief statement of facts, others a more detailed answer; the latter, however, without leading to a composition, which is a question that can not be considered here.

In regard to instruction in drawing and coloring, the schools of the United States present some features that are of great interest to us and very instructive. A closer study of this branch would be most profitable to a professional teacher. I will present only those sides which attracted my attention most. I have already mentioned that a drawing lesson is usually combined with a written composition; the pupil must at the same time draw, perhaps color, and describe a subject. This subject is generally taken from the study of natural science; for example, a plant, or an animal, or a piece of physical apparatus, etc. The teacher tries in this manner to connect the instruction of drawing and painting with other school branches. Some work sent by the pupils of Grand Rapids, Mich., in colored pictures of leaves or other parts of plants, bore the inscription: "Our aim is to aid the instruction in botany by instruction in drawing." Instruction in the natural sciences is of course best adapted for combination with that of drawing. In schools where efforts are made to combine these branches the pupils of the lowest grades (from 6 to 7 years of age) begin with these drawing and coloring exercises. The children are supplied with paper, color



box, pencil, etc., and a flower, and then without further preparation they are told to paint it. The picture which the child produces is naturally very primitive, but then all first results are crude, no matter at what kind of handiwork we make our first trial; in fact, the production of something defective and incomplete is a means of practice and instruction that will effect better results in future. The child's skill in coloring soon improves and surpasses the expectations of everybody. In the Indianapolis schools,<sup>1</sup> and probably in various other places, the children are kept occupied with so-called "silent exercises" in coloring. To the picture they add in writing their own thoughts or ideas on the subject represented. Instead of writing they express them at times by fastening on the paper a number of loose letters, arranged into a sentence. For example, one child wrote under the picture of a buttercup: "Come again buttercup, where didst thou grow little flower?" Another child, representing the leaf of an apple tree, wrote: "This is the leaf of an apple tree. This leaf does not resemble a geranium leaf, it has the form of an egg." It is easily understood that exercises of this kind tend much more to educate and are more apt to widen the perceptive powers, as well as to amuse a child, than if it were forced to write over and over again the same words or short sentences.<sup>2</sup> To give an example of the combining method of drawing and coloring with other branches of study, it may be mentioned that the pupil, naturally at a more advanced stage than that just referred to, has to color maps or characteristic landscape pictures; and that they make drawings of historical events, as the engagement between the *Monitor* and *Merrimac*.

Besides this kind of drawing and painting, however, there should be carried on, at all times, a more methodical study of drawing. In this respect the pupil is to a large extent kept busy inventing new designs and composing decorative forms, at first under the guidance of a teacher and according to certain geometrical motives or forms conventionalized from nature. As examples of such forms from nature, I saw used oak leaves and acorns, the leaf and flower of a wild rose, leaf of a vine branch, blossom and buds of a lilac, an ilex leaf. Some specimens of this kind displayed much taste and inventive talent and were well executed.

All this refers to the mode of teaching in the practice department of Cook County Normal School, Chicago. This practical study occupies quite a conspicuous place on the programme of the normal school.

Drawing on a blackboard is used extensively with the general lessons, and the teacher must possess greater skill in drawing than is usually the case with us. In a school at Moline, Ill., near Rock Island, I saw drawings on the blackboard that were executed with chalk by one of the teachers and had remained on the board from the preceding term. I can only say that they were surprisingly well done and indicated a high degree of artistic execution.

Modeling in clay is a branch that has been introduced in more recent years and has been adopted in a great many schools. In the kindergarten children are set to work with it. They first draw and then model some geometrical figures, as a cube, globe, pyramid, cylinder, cone, etc., or some other easy figures, as a mug, vase, etc. In the Boston schools, where it was first introduced, this subject is taught on a different plan. A few hours' instruction of modeling in clay was every day (except on Saturdays) given to children during the Exposition in one of the rooms of the Children's Building. The instruction was carried on in conformity with the Boston plan. Guided by things I saw and heard, and by a printed paper distributed among visitors and explaining methods, I will attempt to give a few particulars on the subject in question. The aim of this plan is an educational one; endeavors are made to train the child's capacity for comprehending and reproducing forms, or, in other words, to train his eye and hand. The models are after drawings that have been made previously from other models or oral descriptions. The child first forms

<sup>1</sup>J. M. Rice, *The Public School System of the United States*, New York, 1893, p. 106.

<sup>2</sup>*Ibid.*, pp. 126, 127.

a square disk of clay (about 6 inches edge and one-half inch thickness). Upon this raised figures are then formed by means of new layers of clay. The contours are first traced on the disk and must conform with the drawing on the paper that serves as a model for the work. All patterns for the figures are based upon geometric forms. The pupil is sometimes required to personally produce the designs from which he models. Pupils from 7 to 12 years old execute in this manner really difficult tasks upon the square disks mentioned. Older pupils model separate leaves and fruit forms, later animal studies, and finally, parts of the human body. In doing this only the distances from the principal points are measured, and the contours are drawn by eye measure. Thus the work is commenced, to the execution of which, first and foremost, accuracy is requisite, and the models are of such a nature that the parts can be easily measured by the pupil and later corrected by him from measurements. After the eye has been trained to judge and the hand to reproduce such forms correctly, some smaller mechanical designs are attempted that make a transition to more purely artistic work.

That the collecting of natural science objects and other things belongs to the regular school work of pupils, at least in some places, was shown by the exhibits. There were, for example, in the New York State division, herbariums and other collections furnished by pupils; collections of wood specimens, rocks, fossils, specimens of stone and flints. From a high school in Kansas City, Mo., there was a collection of about 300 insects, mostly large butterflies, with notes attached saying that nearly all these specimens had been prepared in a room specially devoted to natural science. From a normal school for women in Wisconsin physical apparatus was exhibited that had been constructed by the students after a pattern which they had themselves invented.

To judge by the exhibits, the making of geographical relief maps is an ordinary occurrence. The raised parts are formed by means of putty or a kind of pulp of boiled paper. The base consists of a wooden plate, sometimes only of cardboard.

I wish to lay stress upon the fact that the branches taught in the United States schools are designed to awaken productive activity. This aim is not subordinate to the regular lessons, but constitutes in fact the principal part, at least much more than with us. Productive work is in our country included in the school programme also, to wit, writing, drawing, arithmetic, etc., but the larger amount of our school work consists in lessons being read over by the pupils and later recited at school. Besides this, our teachers endeavor to inculcate the pupils with ideas; they convince themselves that the pupils have a true understanding and retention of these by their answers to queries in recitations. Our pupils' work, therefore, is preeminently of a receptive kind. It is evident that the instruction given in the United States schools exacts a many-sided self-activity on the part of the pupil, by way of occupying him to such a great extent with work which requires productive activity. To study lessons and to comprehend and recite the information gained calls forth naturally a certain amount of self-activity, but only a one-sided self-activity. It is indeed one of the most important problems of good instruction to tax, in a proper manner, the pupil's self-activity, and this it seems to me is done by the work referred to. This work is also apt to keep the pupil's interest awake, a fact which can be easily understood. It is also evident that the knowledge acquired in such occupations will be better retained by the memory and applied in life. To adopt various kinds of such work in our schools would be most decidedly of advantage. This change could not be introduced without a corresponding curtailing of courses and lessons, but this loss probably would be more than counterbalanced by the advantages gained.

The practical character of the school work in the United States is plain. The aim is to place it, as far as possible, in connection with actual life, during and after school. That this, however, by no means need imply an overlooking of the school's aim to act in the service of education is well understood from the above statement.

Finally, I shall dwell upon the movement and efforts of more recent date throughout



the United States in relation to "raising the standard of the teachers' professional training," and in relation to the progress of the science of pedagogy. The establishment of chairs of pedagogy at the universities is included in the above scheme. The first chair of this kind in the United States was established in 1879 at the State University of Michigan, in Ann Arbor. There is also a chair of pedagogy in Clark University, where Dr. G. Stanley Hall performs the functions of a professor of psychology and pedagogy; another in Leland Stanford Junior University, besides one in the State University of Minnesota, at Minneapolis. The last-named chair was established in 1893.

The "school of pedagogy," founded in the University of New York City in 1890, is certainly quite unique in its nature. This faculty holds the same position in the university as the faculties of law, medicine, and philosophy. The faculty of pedagogy (it is thus designated on a pamphlet sent to me from there) is founded upon the principle that the special training for a teacher's career should be placed on the same level with the training required for other professions. The corps of teachers consists of 5 members, a dean, 3 professors, and a lecturer. The faculty grants two degrees, the lower, "Master of pedagogy" and the higher, "Doctor of pedagogy." To secure the latter it is requisite that the candidate be in possession of a certificate and have had at least four years' successful experience as a teacher; to have pursued for at least two years the studies of the higher section of the faculty, and to pass a good examination in the following five subjects: (1) History of education and instruction; (2) psychology and ethics; (3) pedagogy and methods, including school hygiene, etc.; (4) literature of pedagogy and esthetics; (5) the educational systems of different countries, besides the writing of a scientific dissertation on pedagogy which displays an independent treatment of the subject and bears witness to original research. The first graduates of the faculty of pedagogy obtained their degree as doctors of pedagogy and masters of pedagogy in 1891; in all, 26. Among the doctors of pedagogy who have graduated hitherto there are 5 women. During the school year 1892-93 the faculty counted about 135 students. The persons who pursue these studies are principally those who wish to educate themselves to become school inspectors, superintendents, professors at normal schools, etc.

A recent pedagogical movement, of which Dr. G. Stanley Hall is the originator and leader, attracts much attention. Its aim is to make the child, in the interests of education, an object of empirical study and to base education and instruction more than heretofore upon a true knowledge of the child's physical and psychical nature. Dr. Hall's journal, *The Pedagogical Seminary*, may be regarded as the organ of this movement. Two volumes have thus far been published. With reference to articles in that journal, and to an article by Dr. Hall in *The Forum* in 1893, a few remarks will be added here to point out the work which has been accomplished and the aims and endeavors connected with it.

It should be understood, however, that efforts in this line are not confined to America alone. The leading incentive of the movement may lie in the fact that Dr. Hall is both a practical educator and a psychologist, and as such a follower of the modern tendency, which, being based on psychology and the method of the exact sciences, endeavors to investigate the activity of the soul. This movement originated in Europe, and has there its representatives in Wundt, Fechner, Helmholtz, etc. Valuable works on empirical child psychology have been published in France by Compayré and Perez; in Germany by Preyer. Examinations of a large number of children in regard to their physical condition and for other purposes have been made repeatedly in Europe. Among others, I call attention to the investigations made in 1884, ordered by the Swedish school council, and which became known and famous through the book edited by Prof. Axel Key. Questions of this kind have at present been taken hold of with great zeal by the followers of the American leaders in this question. They endeavor to accomplish cooperation among persons who study the child from various standpoints—teachers, parents, physicians, psycholo-



gists. Their principal endeavor is to gain safe ground for a better education and instruction.

Whatever has been done, though, to advance this study can not be compared with what may yet be done. "The future of the movement," Dr. Hall says, "depends essentially on never-ceasing, laborious work."

The study of a child is very far-reaching, according to Dr. Hall's theory. He divides it into four parts, each comprising one of four stages of development: (1) Prenatal age; (2) the period from birth to the age of 3 or 4 years; (3) from then until 13 or 14 years; (4) from the last-named age to 20 or 24 years. Children belonging to the third stage, or that comprising the larger portion of the school period, have hitherto been the principal object of study and research.

The usual mode of research consists in examining a large number of children, say several thousand, on one and the same point or points. They are measured and weighed, their strength is tested by means of dynamometers; their teeth, eyes, lungs, nose, throat, hearing, their sense of precision and speed in movements, etc., are examined under observance of every precaution to avoid error and to gain a uniformly accurate result. If it is a question of investigating what a child knows in certain lines much tact is required and the cross-questioning is done by experienced and competent persons who are fond of children and accustomed to their ways. One kind of examination in vogue consists in letting a child write down his thoughts on some subject. The child, as has been previously stated, obtains much drill in this line, and even in the lowest classes commits his thoughts to paper. The child even attempts to draw pictures and to illustrate short narratives read to him beforehand.

A very simple method of investigation is one that for a number of years has been followed by the students of Worcester Normal School, at the instance of the principal, E. H. Russel. The students are instructed not to make fixed observations without paying the most scrupulous attention to the actions and speech of the child, and to write down the facts obtained in this manner. These written notes are kept and arranged under appropriate headings, as memory, imagination, anger, imitation, etc. At present there are more than 14,000 such notes on file. They touch upon all questions of psychology, and the best of them are used in the instruction of this branch at the normal school instead of a text-book. The following are examples of notes:

(1) "While I examined what the child had been writing Carrie asked my permission to take her slate home and show the writing to her mother. Immediately following, six or seven other children asked permission to do the same."

(2) "Charlie, the child under observation, aged 5 years 8 months. One evening several chickens had been killed, and Charlie was sent to one of the extreme rooms to fetch a chicken that had already been plucked. After a moment's absence we heard him scream as though he were greatly frightened. Somebody ran out to see what had happened to him and found him very pale and leaning against a table; in the open doorway stood a young, live chicken. After a long time of questioning we finally learned the cause of the boy's fright. He thought that the chicken he had come to fetch had come to life again and was the one standing in the open door. Charlie was, as a rule, not afraid of anything."

(3) "E. (5 years), a girl, went out into a rain storm and, without having a hat on, placed herself in the middle of the road. The mother: 'E., come in and do not stand out in the rain.' E.: 'No; I will remain here until I am soaked, so that I may grow and become tall. I do not want to wear dresses any longer; I want a pair of pants.'"

According to common experience, the instances recited are by no means remarkable facts. The future importance of these annotations to educational psychology is by no means settled yet, but without doubt they will be of some service. "This is no science as yet, but without experiments there is no science."<sup>1</sup> The gain derived from these notes is in one respect immediate. They have proved to be of great help

<sup>1</sup> Ribot.

to graduating teachers. They take greater interest in each child, individually, instead of meditating too much on the pedagogical abstraction called the child. This study of the child, as it is expressed by some people, is done "directly for the sake of the teachers, indirectly for the sake of the child, and has the additional purpose to benefit science."

Some separate examinations of a large number of children and their results will be mentioned here. Professor Bowditch has examined weight and height of 24,500 pupils in the Boston schools. He found that until 11 or 12 years of age the boys were taller and heavier than the girls. Later the girls begin to grow more rapidly and within a few years they are taller and heavier than the boys. However, the latter soon catch up and outgrow the girls. Measurements of about 10,000 children in Milwaukee showed that a child grows more rapidly from May to November than during the other part of the year.

By weighing more than 30,000 children it has been ascertained that children who are intellectually developed early are heavier, and lazy children lighter, than other children on an average would be at the same age.

Investigations regarding the eyesight of school children made in Breslau among 10,000 children and worked out by Dr. Cohn show that the nearsightedness increased from grade to grade. Similar investigations by other authorities show the same results. Examinations have been made even regarding the hearing of children, and it was proved that many children who are not thought deaf nevertheless possess a less acute capacity of hearing, and do not, therefore, profit fully by the oral instruction. Such children are considered less talented, while in truth they are deaf to a certain degree. In Berlin it has been found that 25 per cent of the children examined were more or less afflicted with deafness, and in most cases sufficiently so as to impede the progress of their school work.

The examination of a number of school children in St. Petersburg showed that more than 11 per cent suffered with headaches. Among school children in Hamburg there were 32 per cent having more or less defective nervous systems; the percentage increased from grade to grade. A comparison of investigations in this line led to the conclusion that more than 30 per cent of the school children in Europe have defective nervous systems; moreover, that the percentage in the lowest classes was almost zero in this respect, but increased to 66 per cent during the last year in a classical high school. According to statistical information in Prussia, 289 pupils committed suicide within the period of five years, in most instances from causes arising in school.

The question concerning the effects of fatigue has been treated also. A decrease in the accuracy with which school children performed their work in the morning was observed in various grades. The decrease amounted to 33 per cent during the day, after four or five hours of work.

Some investigations regarding a child's intellectual life should also be mentioned. The first one ever attempted was made in Berlin in 1869, with the object of ascertaining what knowledge a child possesses of things in general. The result was that children showed great ignorance of many things thought to be known by every child. Dr. G. Stanley Hall brought about a similar investigation in Boston in 1880. A great many children, about 6 years old, who had just entered school, were interrogated as to their knowledge in various respects. The questions were put by tactful and experienced persons, usually women teachers. I mention the following results: 14 per cent of the children had never observed the stars and did not have the least conception of them; 35 per cent had never been in the country; 20 per cent did not know that the milk comes from cows; 25 per cent that wooden utensils were made of trees; 13 to 15 per cent did not know the name of the colors green, blue, and yellow; from 13 to 18 per cent did not know what their cheek bones, forehead, and throat were. More than three-fourths of all children did not remember to have seen any kind of seeds, trees, or vegetables in growth. The subjects asked



after were mostly such as are treated in the first reader and discussed with the child at the beginning of the common school course. One danger closely connected with this may be easily recognized if those teaching do not sufficiently consider how little they may expect from a child—namely, that much of what a child learns in school remains simply a matter of memory and empty words, instead of becoming real knowledge.

A child's capacity of retaining in the memory numbers of about nine figures has been proved, and also that this capacity increases with age more than other faculties; besides, that it is greater with girls than with boys, and that it necessitates a great amount of talent in continuous and concentrated attention.

Mr. Earl Barnes, professor of pedagogy in Leland Stanford Junior University, made an investigation concerning the religious conceptions of a child. The investigation was based upon 1,091 compositions, which were written without previous preparation by pupils of different ages in the schools of California; and also upon conversations between children and mothers or teachers, as well as upon a few recollections of older children. Among other things it appears that little children have most realistic ideas about God, angels, heaven, etc. God, for example, is a big blue man who pours water out of a big bucket in order to produce rain, and who beats the skies when it thunders. Professor Barnes advances the idea that the teaching of religion to little children has to be done under an anthropomorphic or realistic form. If we really teach them, as it should be done, that God is a spirit, their imagination will nevertheless give Him a human form with human attributes. A child's imaginations are founded largely on pictures which they see. For this reason it is very important that such pictures be good and well done whenever a religious subject is treated, as, for example, Raphael's Sistine Madonna.

Very recently a society has been founded in the United States for the purpose of working in the interests of child study. The society's name is National Association for the Study of Children. Its establishment was determined upon at one of the pedagogical congresses in Chicago last year. The president or chairman of the society is Dr. G. Stanley Hall. The object of the society is "to promote, through the organization and cooperation of its members, the scientific study of children, among teachers living apart in different places of the country, and among parents or other people who pursue scientific child study, so that they may assist each other with advice, suggestions, and study plans, and in order that material which belongs to one or the other special study may come into the hands of persons who are specially interested in working up such matter." One circular distributed by the chairman of the society contains, among others, suggestions for formulating a general plan for child study in its entirety. The headings of this plan are as follows: (A) Physical growth; (1) weighing; (2) measurement; (3) photographs, taking casts, etc. (B) Motor tests; (1) general researches; (2) annotations of particular movements and plays, which children can execute in the lower classes of the school; (3) strength; (4) promptness; (5) accuracy; (6) fatigue; (7) language. (C) Inquiries regarding the senses. (D) Higher intellectual faculties. (E) Emotions and passions. (F) General observations (such as mentioned and directed by E. H. Russell, of the normal school in Worcester. (G) Abnormal and peculiar children. (H) Miscellaneous. In the circular it is advanced that observations such as mentioned under (F) may be considered as introductory to the whole study, and should, so to speak, be practiced as a first stage as often as circumstances permit. These observations are comparatively easy, while the others, on the contrary, require more complicated methods or apparatus. The persons who devote themselves to special researches should apply the strictest attention to the whole plan and make notes of the kind last named (F).

The enlarged knowledge of a child's physical and mental characteristics, which may result from the movement in question, will no doubt also influence the school and everything belonging to it. It is indeed desirable that the whole educational



activity, as far as possible, should be regulated in conformity with the results obtained by means of this research work. On the other hand, the school itself offers the very best opportunity to collect practical experience respecting children, and to apply and try whatever is best for them. Dr. Hall at present entertains the scheme of establishing a school which in every way shall be an ideal school. He intends to place it in Worcester and connect it with Clark University. Efforts will be made to make the buildings exemplary in regard to plan, heating, lighting, ventilation, etc. The grounds will, among other things, show what can be done within a limited space. The writing desks, as well as other school furniture and apparatus, will be of the best kind. Only prominent men and women teachers are to be appointed, who are able to comprehend the best methods and to make practical use of them. The school is to be under the direction of men of university education, well versed in the history of education, in pedagogy, psychology, and hygiene, besides having a personal knowledge of the best schools in other countries. The financial condition of the school should be such that it can in every respect use and furnish whatever is the best, and make necessary changes whenever they are desirable. It is easy to understand that a school with such characteristics will become very useful, and its benefits will probably not be restricted to America. The readiness to make sacrifices for public purposes, and the enthusiasm which distinguishes Americans, leave room to hope that the plan of this school will not remain on paper only, but become a reality.

## GERMANY.

The German educational exhibit was very excellent. Great pains and attention had been bestowed and large expenditures had been made for the purpose. To judge by the several divisions of this exhibit, which I inspected more in detail, it must have been among the best of the whole World's Exposition. Whoever wished to make a thorough study of the German educational system found here ample opportunities, and the material had been selected with such painstaking care that it would be difficult to imagine anything more appropriate for a study of this kind.

The German educational exhibit had its place in the western gallery of the Manufactures and Liberal Arts Building, on the same side of the building that contained the other exhibits of Germany. A portion of the educational exhibits were placed in a smaller gallery above the first named.

The educational exhibit comprised the university system, higher education for boys, secondary schools for girls, people's schools, with normal schools, and schools for abnormals. In this division I paid special attention to the higher schools for boys and girls and the people's schools. However, I have not found it convenient to give an account of their details. The printed catalogue and guides which were distributed furnish all the information that can be desired. Nevertheless, I will here touch upon a few general features, and on such other items as appear to me of interest.

The largest part of the German school exhibit consisted of apparatus and material of various kinds, text-books, wall maps, charts, models, instruments for the study of physics, etc. One may say that the German exhibit showed, above all, what is done for the pupils, while the United States exhibit contained that which is done by the pupils.

An important part of the exhibit consisted of collections of various kinds of literature; works treating of schools and educational systems; text-books for different branches of study, and a library for school children. There was exhibited a collection of eminent German pedagogical works, partly of more general character, partly treating of the history of education in all Germany or in separate provinces or cities, biographies of prominent educators, etc. Then there were books containing rules and regulations which at the present time are in force for the different kinds of schools, educational journals and annuals, all the proceedings of the directors' conferences and the famous December conferences in Berlin, etc. Several publications

relating to the German educational system were specially written for the exhibition, and these, with several other works, were accessible in duplicate copies to interested visitors. Furthermore, there were collections of annual programmes from various kinds of institutions, among these a number of programmes for secondary schools for boys in Germany in 1892, besides a complete series of annual programmes from 1839 to 1892 from the gymnasium in Frankfort-on-the-Main. For the different branches of instruction there were collections of the best and most commonly used text-books, or such as indicated certain new tendencies, besides works touching upon the methods of teaching various subjects. A complete collection of German readers for the people's schools was of great interest. The collection comprised 225 volumes and contained all the readers of this class up to date, beginning with F. E. von Rochow's *Der Kinderfreund*, published for the first time in 1776, the first German reader for people's schools ever written. A division of the pupils' library, designated the "Normal library for girls' secondary schools," contained 420 volumes; another, from a people's school in Berlin, had 256 volumes, and still another library, for normal school students, contained 560 volumes.

Of the abundant material for instruction, only the most important will be noted here, and this was intended for instruction in natural history. Several series of charts for this branch were exhibited. Among these, it seems to me that the well-known zoological charts by Lehman-Leutemann (*Zoologischer Atlas*) occupy the most prominent place, and would be of benefit to our own schools. Worthy of notice were also Meinholdt's "Wandbilder für den Unterricht in der Zoologie," which probably contain more species than the foregoing work; also Leuckart and Nitsch's "Zoologische Wandtafeln," besides Engleder's "Wandtafeln für den naturkundlichen Unterricht." The latter work contains a botanical and zoological division. Very good were Niepel's "Wandbilder des niederen Thierreiches." Of charts for the anatomy of the human body, there were, besides those by Dr. Fiedler, which are more familiar to us, some issued by Max Eschner, four in number and very much like the former, but perhaps a little better. A pretty pictorial work is that of Jung, with several others, newly issued, "Neue Wandtafeln für den Unterricht in der Naturgeschichte," 22 large charts painted on a black background, and each representing a plant or animal type, with many analyses. As a purely botanical picture work may be mentioned, above all, Zippel und Bollman's "Ausländische Kulturpflanzen," an excellent pictorial work, with carefully elaborated and very valuable text. In the edition on exhibit the background was kept in black, while the illustrations themselves were colored. The charts in Dodel-Ports "Anatomisch-physiologischer Atlas der Botanik" showed very fair illustrations. The work by Lubarsch, "Wandtafeln zur Blütenkunde," showing flower diagrams of various coloring, I consider very valuable in the instruction of plant families.

Fine biological and zootomical preparations were exhibited by W. Haferlandt, of Berlin. They were preserved in alcohol and kept in air-tight, square glass bottles. As examples, I quote of the biological preparations: Common frogs (two specimens of spawn periods), nine larvæ, one younger and one older frog, besides a working bee (eggs, larvæ, chrysalides, full-grown insects). Of the zootomical preparations: Large house rats (opened and the interior organs exposed); further, a bird, a fish, a helix, a crawfish, etc., treated in the same manner.

School material which was not at the same time material for instruction was sparsely represented. A kind of blackboard deserves mention. In one kind the board itself was made of black glass. These boards or slates are manufactured by F. Bender, in Dusseldorf. It was easy to write on them; they are easily cleaned and are no doubt of greater durability than blackboards of wood. Their surface is lusterless, although they are of glass. Another kind of blackboard was exhibited by A. C. Lemcke, of Cassel. These were made of papier-maché, long and lusterless.

The pupils' work occupied only a small space in the German exhibit, nevertheless it was not entirely absent. Some series of copy books, drawings, manual work, etc.,



from various kinds of schools, were exhibited. Among others, there was a collection of compositions by graduating classes of 1892, from 20 secondary schools in Prussia, belonging to different grades.

#### NOTES IN REGARD TO THE WORLD'S CONGRESSES.

By KIRSTINE FREDERIKSEN, Copenhagen (Frederiksberg).

In connection with the World's Exposition at Chicago a number of congresses were held during the summer, at which representatives from all parts of the world met. Mr. Charles Bonney, the president of these congresses, expressed the hope in his opening address that they, as well as the Exposition, might aid in the promotion of general fraternity and harmony among the different nations. One of the speakers said that he considered the Exposition to be an "annex" to the congresses which the participants should not fail to see. Several celebrated persons from Europe were present specially for the purpose of delivering addresses at these meetings. Unfortunately, some representatives restricted themselves to sending in papers, which were read by other persons, while the great names were, nevertheless, displayed upon the programme. To the Americans, who are fond of having hobbies, these congresses frequently seemed to be of much greater interest than the Exposition itself, however proud they were of the latter. They threw themselves with astonishing vigor and independence into the discussions; yet even the most callous European could hardly fail to become interested in the variety of types and conceptions which he met here. A critic could have found various things to criticise, but the person seeking for instruction was rarely disappointed.

The last two weeks in July were devoted to education in all its numerous forms, and there was scarcely an educational question which did not appear on the programme and in the discussions. Sometimes the proceedings took the form of a simple debate; more frequently a number of previously prepared treatises were read, viewing the subject from different points. By addressing their words directly to the audience the speakers often succeeded in having a theme well discussed. Most successful were the "round-table" discussions.

Mr. Harper, rector of the new University of Chicago, although a clerical gentleman, seems to be well informed in worldly matters. He thoroughly understood how to engage prominent professors for the university; many of them are distinguished scientific men of mature age, who attract pupils, and there are younger men who can bear the burden of heavy work. The university, recently founded, has already, among other collections, a richly equipped psycho-physical laboratory, which was in full operation within the Exposition grounds. In the selection of the women professors the authorities seem to have been very fortunate. Mrs. Martha Foote Crow, professor of English literature, who took an active part in the congress, gave an excellent lecture on liberty of teaching at the university. "Too often," said she—no doubt she is perfectly right in her assertion—"the leading mind at the smaller American universities is proved to be an energetic person, but narrow minded withal, and sectarian interests are promoted above science."

The question of coeducation at the university was also treated thoroughly by Mrs. Crow. In her opinion coeducation is worthy of recommendation, though only as the smaller of two evils. As in England, many women in America, especially in the Eastern States, prefer a university education in institutions for women, even if they are in favor of coeducation in the lower classes of the schools. I heard the argument advanced in a private conversation that the young girls easily become conceited by studying with men, because the latter rarely read with as much diligence and earnestness as the girls. In a series of pupils' exercises from a high school I found the same opinion expressed by boys.

In addition to the excellently equipped women's colleges of the East and the coeducational universities, usually found in the West, there exists in America a third form—the "Annex," at Harvard University. The professors who give instruction to male



students hold separate lectures for women. This is doubtless only a transition state, called forth by the peculiar prudery that reigns even in the most cultivated society of America (see Howell's novels). Mrs. Crow stated that she had been confirmed in her faith in the coeducation of the sexes when visiting European universities, as she had been especially impressed with the fact that young men are greatly in need of the comradeship of women.

Another woman advocate of coeducation in universities called attention to the fact that the mere admission of female students to an ordinary university could not be considered the final solution of the question. Such a solution could only be found in the proper arrangement of the course of study and in taking into consideration the influence consequent upon companionship and cooperation.

A notable woman who attracted special attention was Elizabeth Hughes, from England, directress of a teachers' seminary at Cambridge University. Her most excellent thesis touched principally upon the education of teachers, both for higher and lower schools. She held the decided opinion that the acquirement of general knowledge should be separated from the technical or professional education of teachers, which should cover at least a whole year. Let the young men and women first endeavor to become well educated, and then let them devote all their mental power and energy to the study of their special profession as a teacher.

Miss Hughes herself received a university education, and she, with Mrs. Crow, anxiously desires an international organization for the higher education of women. In 1882 the society of "The Collegiate Alumnae" was founded in the New World, with the twofold aim of encouraging a high standard among women students and of making their knowledge and education productive in practical life. This society has so high a reputation that universities and colleges consider it both an honor and an advantage if their students are admitted as members. Its exhibition in Jackson Park indicated that it had taken hold of such practical problems as the so-called "College settlements," a kind of "people's palaces," which are exclusively conducted by college girls, and it has also taken up work of a more theoretical character, as, for example, the study of child nature. The idea of extending this society by means of European branch institutions seemed to meet with the approbation of the majority of women who had received a university education, and was especially favored by the English women.

The protection of higher education against a too rapid extension is a problem of urgent importance in America. For this reason, members of the most prominent universities were appointed at the congress, and it is hoped that they may find means for preventing unworthy persons from obtaining the doctor's degree.

Of more positive interest were the congresses at which the university professors from Worcester and California submitted the results of their psychological experiments. They, like the women who received a university education, study the child's early manifestations of soul life with special interest. The leader of this school of young, enthusiastic men and women is Dr. G. Stanley Hall, president of Clark University, Worcester, Mass. This university is the center of a recent pedagogical movement. The normal school students of the city stand in close relation to the university, whose professors take pleasure in lecturing to the future public-school teachers, while these willingly collect various facts from daily school life and submit them to the disposal of the learned experimentists. In an interesting lecture at the congress President Hall expounded his thoughts on the relations between pedagogy and psychology. "The hour has come," he said, "when the Americans are no longer in need of the leading strings of the Germans. So much young and fresh talent ought to be able to create something original."

When we consider the result of the congress, we may say that experiments are always carried on on a broader basis in America than with us. In regard to child psychology we have (with a few exceptions) during late years been directed to whatever can be learned from Preyer's observations of a child. When the Ameri-

cans take hold of a question, such as the color vision in children, examinations are simultaneously carried on in Boston with perhaps 500 children, in Worcester with double that number, and in California with from 5,000 to 6,000 children. Mrs. Dana Hicks, from Boston, gave some very interesting statistics on this subject. As a prominent representative of Prang's methodical instruction in drawing, she put great stress upon the importance of cultivating the child's sense of color. Several curious facts were mentioned. Among others, that difference of race makes itself conspicuous in the little child's partiality for certain colors. White children prefer—or recognize—first, yellow and red; negro and Chinese children, usually blue or green. A young professor, Mr. Barnes, from the new university in San Francisco, showed a number of quite simple drawings made by children of all ages in illustration of a piece of poetry read to them. Just as surprising and amusing as were these drawings—reproduced upon the wall and enlarged side by side with the originals—just so ingenious and sympathetic were his interpretations of what the little ones intended to express. In the Pedagogical Seminary and the American Journal of Psychology one can follow the proceedings and experiments carried on by that group of men and women who gather around Dr. G. Stanley Hall.

Taking place at the same time as the congress of "Experimental psychology" was that of "Rational psychology." A strange contrast it made; a meeting of men of venerable years. Their speech seemed in accordance with their age; in so far as I could understand, a mixture of Emerson's transcendentalism, of German philosophy, and American theology. However, at a later meeting, I met on that side a youthful professor, a man with a powerful head, and who was evidently highly gifted, Mr. Royce, from Harvard. He tried, apparently, to enter into a compromise with the representatives of the Roman Catholic Church. Another group of younger men represented the "Herbartian school." Professor de Garmo, the author of popular educational text-books, seems to be the leader of this movement, which is by no means inferior to the above mentioned in regard to the enthusiasm and ardor with which they endeavor to introduce their theories into practical school life. Some dissension arose in respect to the practicability of Herbart's psychology as a foundation of education, while harmony reigned in regard to the adoption of his practical educational ideas concerning correlation of the various branches taught at school. As original writers and eloquent advocates of the latter, several teachers from Francis W. Parker's Normal School, near Chicago, made themselves heard.

Mr. Parker himself discussed the subject "What shall be taught in the public school?" He is known as one of the most prominent "faddists." A "fad" is something temporarily fashionable—a kind of epidemic—and the taxpaying citizen places under that head all modern subjects that cost money, such as slöjd—sewing included—drawing, physics, and foreign languages. The press and a powerful party in the municipal council designate the introduction of such professional training as contrary to true American theories. The German population alone, it is said, want the introduction of a foreign language in the schools, and a storm of opposition is heard in regard to expenditures for teaching sewing and manual training whenever a woman is proposed as candidate for a position in the municipal council. It is assumed that there will not be time enough given to the poor children for acquiring a knowledge of the three useful R's (reading, 'riting and 'rithmetic). Probably all this commotion is raised in the interest of the taxpayers and their votes on election day.

On the other side stand, for instance, the adherents of Prang's method of drawing, at present in use in Chicago. They proceed with so little consideration and make such high demands for certain sets of apparatus that forcible remonstrance is easily understood.

Great impression was made by the lecture of Rabbi Emil Hirsch on the subject of manual training. He told the Americans the truth on this subject. Their unbounded admiration for "smartness" and exclusive culture of the intellect causes a neglect



of both physical training and manual labor. The American press asserts quite undisguisedly as something perfectly natural and correct that the Americans leave the foreigners to do the manual labor, while they themselves work with the brain.

Meanwhile, in the pedagogical world, the current takes a very different trend. This was plainly proved by the fact that the discussion on the kindergarten and its principles played so large a rôle at the teachers' congress. The many manual training exhibits, sent in by public schools, seemed to give significance to the words of those people who maintain that the press exerts little influence in America, while, on the contrary, the so-called "faddists" indicate greater wisdom by going on in their own way, with or without the assistance of the press.

### SOME CHARACTERISTICS OF THE EDUCATIONAL EXHIBIT OF THE WORLD'S FAIR.<sup>1</sup>

By M. EUGRAPHE KOVALEVSKY,

Delegate of the Department of Public Instruction in Russia.

The first three universal exhibitions, those of London (1851 and 1862) and of Paris (1855), did not contain an educational department. This feature appeared for the first time at the second Paris Exposition, in 1867, and met with considerable success. At the Centennial Exposition in Philadelphia, in 1876, the department of public instruction received due consideration, and visiting foreign instructors were enabled to become acquainted with the American public school system. Only a limited number of States, however, took part in it—twelve in all—and their exhibits were far from complete.

The present Exhibition naturally could not dispense with the educational department. Americans are proud of their public school system, and resolved not to spare any pains to represent it at the Exhibition in the most complete manner. Besides all the States, the different religious denominations, educational societies, publishing firms, and even private persons, were invited to send their exhibits. The result was an enormous number of exhibits, for the accommodation of which a space was assigned many times larger than that of the last exhibition.

The American exhibit occupied 175,000 square feet and the foreign exhibit 50,000 square feet. The number of exhibits in this department, judging from catalogues and lists furnished, must have been at least 25,000 or 30,000, and as some of these exhibits contained 100 or more different objects, the whole was a proof of the unprecedented development of the art of instruction in America, as well as in other countries.

Considerable embarrassment was caused to those interested in educational matters by the fact that these exhibits were placed not only in the Manufactures and Liberal Arts Building, but also in many other buildings. \* \* \* The chief interest centered, however, in the exhibits placed in the Manufactures and Liberal Arts Building. The exhibits in the different State buildings were outside of competition.

In the American department the chief importance was given to elementary instruction. By this is understood in the United States the instruction given in the schools for young children, kindergarten, infant schools, primary schools, grammar schools, and high schools.<sup>2</sup> Here belong also evening schools, special training schools, and normal schools of different grades, whose business it is to prepare teachers for the different kinds of schools. \* \* \*

Having made an arrangement with L. de Dimcha, delegate of the department of instruction from Russia, under which I took charge of elementary instruction, while

<sup>1</sup>Abridged from complete report in the journal of the minister of public instruction, St. Petersburg, 1893-1894.

<sup>2</sup>M. Kovalevsky is in error here. High schools in this country are always classed as "secondary."—ED.



he took up secondary and higher education, I shall, in my report, speak principally of the elementary side, and refer to the other only incidentally. \* \* \*

He states that "the arbitrary mode of naming institutions of learning in the United States must have presented a considerable obstacle to correct classification. In absence of a normal classification fixed by law, States, municipalities, and private persons give their institutions names which do not correspond to the reality. In many institutions named universities the pupils receive only secondary instruction, while some colleges, which contain several faculties, in reality correspond to universities in the European sense of the word.

"On the other hand, there are colleges, Girard College, in Philadelphia, for instance, which consist really of a preparatory school with some professional instruction. 'Academies' sometimes appear in their course of instruction below the public high schools, and these last again are not at all alike. An entirely inappropriate term is 'State normal university.'

"It is evident that this variety of names causes a great difficulty in the correct classification of the institutions; but whatever was done in that direction will prove of assistance for future exhibitions."

The diagrams and statistical tables, seen in connection with the State exhibits, "proved very useful, as they enabled the visitor to decide whether the exhibit deserved a closer examination." \* \* \*

The phonographs presented very original innovations. At a certain time they were wound up, and delivered opening addresses and discourses on public instruction and sometimes—what was still more interesting—the explanations of teachers on different subjects, their questions, and the answers of the pupils; or again, a lesson in music and recitation. The State of Colorado exhibited besides a very interesting innovation, a stenographic report of class recitations.

Photography, of course, played a very important part. Besides the usual collections representing buildings and pupils, there were some instantaneous photographs representing pupils at work in the class room. The most complete exhibit in that line was from the State of Indiana. These photographs were very interesting; some of them represented the pupils during gymnastic exercises. The Boston Normal School had a series of them showing the positions of girls during the exercises. The faces in these were veiled in order not to show the features. Drawings vied in number and variety with photography. There were thousands of these drawings beginning with the simplest by children of 6 or 7 years, and finishing with paintings in oil and water colors.

In the first rank must be mentioned here the Industrial Art School of Philadelphia; a very high-sounding name for an institution where the pupils of intermediate schools come twice a week to receive instruction in drawing, modeling, and wood carving. This school has worked out a new method in drawing which attracted considerable attention at the Exhibition. According to the idea of Mr. J. L. Tadd, the director of this school, the drawing is done by the pupils on the blackboard, free-hand, using both hands alternately.

Of the Russian representatives, Prince Wolkonski and Mme. T. B. Semetchkine pronounced in favor of the system. Mr. T. H. Gerb expressed himself as skeptical. In my opinion the system is deserving of investigation, both from a hygienic and educational point of view.

The manual training exhibit occupied a very considerable space. The collections in this were of three kinds: the Swedish (*slöjd*), the French (the system of Salicis), and the American, which is still in a state of development.

Side by side with the manual training exhibit were placed an infinite number of articles prepared according to the Froebel system in the kindergarten schools. Collections of models in clay made in these latter schools and also in the lower grades of primary schools filled the show cases of the State exhibits.

Some of the States did not content themselves with the above-mentioned exhibitions, and had arranged some exhibitions of the school children at work. In the Illinois State exhibit were two of these, a Froebel school and a school for the blind.

In a separate building put up by the Indian Bureau was an exhibition of the Indian school system. The pupils were living in the building, and were also preparing their own food there.

Among the State exhibits those of the older States excelled. The first place among these must be accorded to Massachusetts, the city of Boston at the head, the so-called Athens of America. \* \* \*

Exceedingly interesting in this department were the photographs of free public libraries, which exist in such numbers and are so situated throughout the State [Massachusetts] that the whole population, almost without exception, has access to them. \* \* \* A magnificent and extensive exhibit was presented by the State and city of New York. \* \* \* Not less extensive and complete was the exhibition of the State of Illinois, in which is the city of Chicago. Besides the exhibition of children at their work and the model schoolroom, this department showed very rich and complete collections.

The manual training work was very fine. The first place was occupied by the city of Chicago, whose exhibits were excellent. Both of the State normal schools sent interesting exhibits.

Of the exhibitions of the Northwestern States the best was from Minnesota. A number of cities and towns took part in it, but the chief place belonged to St. Paul and Minneapolis, twin cities. The general course of elementary instruction was very complete there.

In the exhibit of the State of Indiana the principal place also belonged to two cities, Indianapolis and Laporte. The first of these sent a beautiful collection of photographs. In the schools of this city the method of teaching is based as far as possible on the immediate observation of nature.

Exceedingly interesting were two large wall diagrams showing the distribution of young people's reading circles and of reading circles of teachers. In the State of Indiana nearly every school has a library attached, to which the pupils have access. \* \* \*

The teachers also have their special clubs and circles, the aim of which is principally to discuss the latest works on education and compare views on the same. \* \* \*

From Pennsylvania, as one of the richest and most advanced States of the Union, more could have been expected. However, the superintendent had sent a very complete report of the school work and statistics of public instruction. The visitor was impressed by the great number of schools in the State, 23,000.

The department of the State of Colorado was interesting by its exhibition of phonographs already mentioned, and the stenographic reports of school work of the city of Denver. The English language is particularly well taught in the schools of that State.

The rest of the exhibits were simpler in character, but full of interest.

Besides two exhibits of kindergarten connected with the different State exhibits, this system of instruction had several sections exclusively devoted to it. The kindergarten, as a preparatory step to the primary school, has met with success in America. It attracts the attention of teachers, although two-thirds of the kindergartens are private institutions. They have not yet become a part of the system of public instruction, as is the case in France with the so-called "maternal schools," and so far exist only in cities. At the present time 137 cities and several States have acknowledged their usefulness and furnish means for their support. Besides several local societies, there was established in 1892 in the city of Saratoga the International Kindergarten Union, the aim of which is the unification of efforts in that direction.



The different show cases in this department belonged to the Kindergarten College of the city of Chicago. The work of the pupils was systematically and beautifully displayed in the show cases. In the first division of the school, children of  $2\frac{1}{2}$  to  $5\frac{1}{2}$  years attend; in the preparatory department, children from  $5\frac{1}{2}$  to 6 years; and in the elementary department, children from 6 to 7 years; in the industrial classes, children are taught from 6 to 14 years of age. The house of Pestalozzi-Froebel presented the kindergarten system in its most complete and purest form. Close to the house was a large garden with all the necessary complementary arrangements. For the training of instructors in these schools there is a kindergarten college in the city of Chicago. The course in it embraces three years—the studies are theoretical and practical.

For technical education we shall point to a group of institutions called normal training schools. Two schools of the city of Chicago took part in the exhibition—one for beginners, the other a professional school; also technical schools of the following cities: St. Louis, Toledo, Baltimore, Cincinnati, and New York. Near by was the exhibition of the Jewish school of Baron Hirsch, also from New York.

For an exposition like the Columbian this is a very meager presentation of technical education, particularly for a country where technical knowledge stands so high. However, Americans do not deceive themselves on the subject and confess that technical education is not as general with them as it ought to be.

Tverskoi, the author of *Letters from America*, speaks of a justice of the peace who, having sentenced a young offender to the reformatory, congratulated him on the happy prospect for him of acquiring a trade, which, owing to the lack of institutions of that kind, did not fall to the lot of many.

From the present short review of the exhibition we shall have to exclude the institutions for the blind, for the deaf and dumb, and for the feeble minded; also the schools for the colored race, and the school of the Woman's Christian Temperance Union, whose work is deserving of particular attention.

The department of school appliances, text-books, and school material was located in the northern part of the building. The exhibit of books for school use was very large. \* \* \* Besides the International Educational Series, Appleton has published many volumes of compilations on similar subjects. Other firms pay principal attention to text-books, which, being in great demand, prove very profitable. There is a great variety in the quality of text-books. Some of the poor, out-of-the-way schools, consisting of one class, use only small editions printed on cheap paper, while the rich city schools of such centers as New York or Boston and St. Louis use very handsome editions. This variety, however, has its inconveniences, and lately there has been a tendency to centralization in that line.

We made a collection of text-books used in the primary schools which can give an idea of the character and distinctive features of the books used for instruction in American schools. It has been forwarded to the educational library of the department of public instruction in Russia.

In the exhibit of the United States Bureau of Education a model library of 5,000 volumes was arranged. Reports and statistical tables were displayed; also photographs of school buildings. A separate show case was devoted to the schools of Alaska.

The model library was selected by a special commission of experts from the American Library Association. It consisted of 5,000 of the most suitable books, in the opinion of the experts, for a city public library. The publishers' prices of the books, without reduction, amounted to \$12,000. All these books were entered in a special catalogue of 300 pages.

Those interested in the formation of a library were especially attracted to this exhibit, as all the most modern inventions for the cataloguing, finding, and preservation of books and pamphlets were made use of. At the close of the Exposition this library will be sent to Washington to be placed in the Bureau of Education.



Professor Rice, who was commissioned by The Forum to make a study of the school work of the country, characterized the first impression of his visit by the very expressive word "chaos." Doubtless there is a great difference in the mode of instruction, programmes, and results achieved by the different primary schools. At the same time they also have a great deal in common; essentially the same American spirit animates them all. There is also a constant tendency toward a unification of the methods of instruction.

Of the three fundamental principles on which the work of public instruction is agitated in western Europe, namely, compulsory attendance, free instruction, and neutrality in regard to religion, the two last are acknowledged in all the States of the Union. \* \* \* Gradually, but not without a severe struggle, the people came to the conviction that elementary education must be accessible to all, to the poor as well as the rich. A decidedly new departure in this direction was taken in 1837 under the leadership of Horace Mann, the well-known worker in the educational field. The free school system is at present firmly established in the States of the Union. \* \* \* The second in importance is the nonsectarian character of the schools, which is acknowledged by all the States. A great many different denominations and sects exist in the Union, and in the absence of a state religion, and in the presence of a complete separation of church and state, it is natural that the schools should exclude from their programme dogmatic theology. The children of the different denominations receive religious instruction from their spiritual instructors in the so-called Sunday schools. In the public schools the duties of the teacher are to set their pupils a good example in morality and good conduct. In some States the custom of reading the Bible in the schools is still kept up, but without any special comment being made.

The third principle, compulsory attendance, is so far in force only in 27 States; the others are on the way to its introduction. Since 1886 this tendency has been increasing. Free admission of all children to the schools exists in principle in the Northern, Eastern, and Western States. All the children of a certain district or town have a right to attend the same school, without distinction of sex, condition, or race. In the 16 Southern States separate schools are established for the negroes. In practice the children of colored races attend separate schools in the other States also. This is principally the case in the primary grades; in the higher grades this distinction is not made.

A very characteristic trait of American schools is the coeducation of the sexes and the similarity of the education of girls to that of boys in all branches. Coeducation is in practice now in the whole country, with the exception of a few large cities. The girls study with the boys, not only in the elementary schools, but also in the secondary schools and in the universities. The results, according to the unanimous testimony of American instructors, are very satisfactory. The young people are gentle in their behavior in class; the girls work more diligently in trying to emulate their companions. There are no shortened programmes or simplified text-books for girls; they are working with the boys on an equal footing and frequently surpass them in the progress made. \* \* \*

In the sphere of State legislation a tendency toward unification and centralization is noticeable. At the head of the school work of each State stands (1) the State board of education, (2) county boards of education, (3) city boards of education, (4) district school boards. With the committees of the first three orders are superintendents, whose duty it is to inspect the schools and the school work. \* \* \*

In view of the great importance given to school hygiene in recent years, it is the duty of inspectors to see that all the rules are complied with in regard to vaccination, the prevention of the spread of contagious diseases, heating and ventilation of the buildings, etc. The number of supervising officers in this branch in the United States is 2,694.

In the public press and in the reports of the Commissioner of Education it is constantly pointed out that this work has not yet attained its proper proportion. The opposition to it comes from the local school committees, but the tendency is to increase it. The school committees of large cities rival frequently in influence the State committees. They are generally quite independent and merely send their statistical reports to the State superintendent. In the schools of the far West, situated on the prairies or in mountainous districts, the teachers manifest great independence in their school work, in teaching as well as in the government of the schools. But it is different in the older States. There the school boards define very carefully how and what shall be taught during the year. The regulations to this effect form whole volumes—a schoolroom guide, where teachers can find full instructions for action in every possible contingency. These regulations for the duties of teachers are not made from a desire to narrow down their liberty of action, which would be contrary to the American spirit, but in view of a practical necessity.

Owing to the conditions of American life, teachers do not remain long in their places. Buisson, in his valuable work on American schools, mentions the State of Kansas, where one-third of the teachers are changed annually; in the New England States it is one-fifth. The certificates presented by the candidates for teaching testify to their knowledge of subjects taught, not to their ability to conduct a class; consequently in some of these regulations furnished to young teachers innovations are expressly forbidden, as they would lead only to a loss of valuable time. The committee makes a written contract with the teacher in which all the duties of the latter are enumerated. At the end of the year the teachers have to present to the superintendent a full report on the condition of the schools intrusted to them.

For the preparation of teachers there are special institutions—normal schools—in which the course lasts from two to four years. For negro teachers there exist special normal schools and educational institutions to the number of 40. One-third of them are supported by religious and educational societies. Graduates of normal schools do not form a large percentage of teachers.

Per cent.

For Maine .....	28
For New Hampshire .....	17
For Connecticut .....	42

And only in the small State of Rhode Island it amounts to 70 per cent.

The female teachers outnumber the males. In the Froebel schools they reign supreme, and predominate also in the one-class schools, in the elementary and intermediate schools. \* \* \* Evidently the passing of elementary instruction into the hands of women exclusively is only a question of time in the United States. \* \* \*

In the programme of study for the different elementary schools there is great variety. American elementary schools are divided into two large groups, the graded and ungraded schools. The ungraded schools consist of one class with one teacher. Their principal aim is to teach those attending them “the three R’s”: Reading, writing, arithmetic. As soon as there is an opportunity these schools are converted into graded schools. The graded schools, as already stated, are of three kinds, primary, intermediate or grammar, and high schools. The course in these extends from five to six or eight years. \* \* \*

The English language is unconditionally compulsory in the public schools of the United States, even where the majority of the population speak a different language.

The American schools have a very difficult task to perform. They have to train children to become citizens capable of taking part in public affairs from such diverse material as the native Yankees, the negroes, the Indians, and the foreign immigrants, consisting of Germans, Irish, French, Italians, Swedes, Norwegians, Poles, Russians, and Danes. All these persons could not take part in the affairs of the country unless they were familiar with its language, for which reason the schools



pay particular attention to this instruction. The number of schools and pupils is very great, and during the last decade great progress has been noticed in this direction. \* \* \*

Private denominational elementary schools are of little importance. Of the whole number of pupils only 9 per cent attend them. The remaining 91 per cent attend the public schools. \* \* \*

The high average cost of school buildings in the United States is due to the fact that they are put up now in the most modern style. They are remarkable for the comfort and fitness in their arrangement of class rooms as well as for handsome architecture. Many of the schools contain large halls for gymnastic and other exercises and meetings, workshops for manual training, libraries, and physical and chemical laboratories.

In contrast to these city schools, the country schools have frequently very poor accommodations. In the mountain districts and on the prairies the common log schoolhouse is still met with. The majority of these schools have frame buildings. These last are a special American invention. Externally they resemble pretty cottages; they do not cost much, and are furnished complete from the manufactory. But they have their disadvantages; in the winter they are cold, in the summer very warm, and when the wind blows high they are turned over like card houses.<sup>1</sup> The reports that cyclones have carried off whole villages are not fables. I myself had a chance of seeing a little village destroyed by the wind. The inhabitants had encamped around the spot and seemed not to grieve much about what had happened. Some of the houses, among them the schoolhouse, which had been lying on its side, were propped up, and the people were rebuilding the other houses.

The division of gymnastic apparatus was especially examined by T. Tv. Guerd, who purchased at the Exposition some portions of the apparatus which seemed to him particularly new and interesting. Such gymnastic apparatus as was purchased was forwarded to the educational museum connected with the military institutions in St. Petersburg, where it can be seen by those interested in the subject. Besides the section of gymnastic apparatus, a very extensive collective exhibition of the so-called North American Turn-Verein was deserving of attention.

These gymnastic associations, judging from the pamphlets at the Exposition, have for their aim the physical development of children, youths, and grown persons; besides, they are trying to improve the mental development of their members by instituting reading circles and clubs where debates are carried on and pamphlets and books published. The leaders in this movement assert that gymnastic exercises, practiced in circles and in schools, tend to form a nation of good soldiers in case of need, and in the meantime develop in the young courage, independence, presence of mind, and cheerfulness. \* \* \*

The collective exhibit of commercial schools attracted the attention of specialists and merchants. Commercial education in America presents peculiar characteristics suited to the local needs and circumstances of the great transatlantic Republic. \* \* \* These colleges, or schools, very well supply the demand for trained bookkeepers, stenographers, and typewriters, and are a great convenience to candidates for these positions.

At the Universal Exposition in Paris in 1889 the Catholic clergy declined to take part, the relations of the clerical power and the Republic were strained, and in the French educational department the public school reigned supreme. It was concluded to make up for this omission at the Columbian Exposition.

According to the idea of Cardinal Gibbons, of Baltimore, there were to be collected for the Exposition exhibits of Catholic schools of the whole world, and the arrangement was to be as interesting and extensive as possible, in order to present to the public the results of the labors of the Catholic clergy in the field of popular

<sup>1</sup>In reasoning from the particular case narrated in the closing portion of the paragraph to the general, the author has allowed too free play to the imagination.—ED.



instruction, and thus to advocate the idea of parish schools. To the appeal of the Cardinal the majority of Catholic schools of America and some institutions of France, Spain, and England responded. The exhibits from these countries formed together a collective exhibition which occupied the enormous space of 29,000 square feet. There were taking part in it 12 brotherhoods of Benedictines, Capuchins, Jesuits, and the order of Christian Brothers; 37 sisterhoods, of which we noticed the Sisters of Notre Dame, the Sisters of Mercy, the Sisters of the Poor in Christ, etc. \* \* \*

Of the European institutions there were represented at the exhibition 68 from France, 5 from Spain, and 2 from England.

There was plenty of material for inspection, even an excess of it. Most prominent were female handiwork and drawings. The Christian Brothers exhibited in their American schools the work of pupils in the English language of very good quality, also in composition. In the diocese of Kentucky some water colors were prominent; in woodwork a carved altar of very fine execution, the work of the pupils of St. Joseph's Orphan Asylum, in Columbus, Ohio.

In looking over the programme of study in the parish schools of the diocese of Philadelphia I noticed that in the grammar grade schools the geographies only mentioned, in regard to Russia, that the River Volga flowed there and that there were three cities, St. Petersburg, Moscow, and Odessa.

The schools for deaf-mutes of St. Etienne, Besançon, Bourg, and Bienne exhibited appliances for the instruction of their pupils, with illustrations of the position of the lips in pronouncing the letters. In the commercial department of the schools of Havre a small museum was established, where all imported products were exhibited as an assistance in the study of commercial geography and natural science.

In some of the French schools the study of stenography was introduced as an innovation, which is of great practical importance at present. In examining the albums and collections in this department I was more than once surprised to find that the character of the subjects was throughout connected with the church. The drawings were copies of images and church frescos; architectural work was devoted to church edifices; even cabinetmaking and the ironwork had a church character. Such specialization can hardly prove desirable, in view of the small industrial importance of such work. Taken in general, this department showed that the Catholic clergy was working very energetically in the field of public instruction.

The department of the different Protestant churches and religious associations presented a mass of facts in regard to their activity in public instruction. The first place must be assigned here to the section of the Congregationalists. \* \* \*

The Methodists have founded 10 religious seminaries, theological faculties at some universities, 45 male and female colleges, and 61 classical seminaries; the Baptists, 34 colleges, 7 theological institutions, and 50 academies, principally in the Southern States; the United Brethren in Christ, 2 universities, 9 colleges, 6 academies, and 1 male seminary; the Disciples of Christ, 5,756 Sunday schools. In this department was also the exhibit of a very attractive association, called the Young Men's Christian Association. Branches of this association exist in many countries of Europe, Asia, and Africa, and in the islands of the Pacific. In Russia (probably in Finland and the Baltic provinces) there are 9 of them. The association exercises an extensive and beneficial influence, and its activity has the sympathy of the people.

The Jews had two exhibits, the professional institutions of Baron Hirsch and the collective exhibition of the Alliance Israelite Universelle. The schools of this association did not present a denominational character. Their aims are purely educational, and they try to avoid the narrow spirit of exclusiveness. It has nearly 40,000 members. It has taken up the difficult task of assisting the moral and intellectual development of the Jews, of encouraging the acquirement of professions and trades, of struggling against their ignorance and faults, frequently the result of ill-founded prejudices, and of assisting as much as possible in their emancipation in those coun-

tries where they do not enjoy full civil and religious liberty. This association, working outside of political and religious questions, directs its activity, according to a circular published, principally to the work of education, and has established schools founded on the modern demands of education, in place of the old Talmud Toro's school, which is of a sectarian character. These schools have been established in Turkey, Bulgaria, and on the shores of the Mediterranean in Asia Minor and Africa. The show cases at the Exposition were filled with a quantity of articles; the exhibits of agricultural institutions excited special interest, as they proved that with proper education the young Jews were capable of taking an interest in agriculture, for which in Russia they generally show an aversion.

In the same proportion as the exhibit of the United States was extensive, many-sided, and interesting, the exhibit of foreign countries was modest and incomplete, with the exception of, perhaps, Germany, Russia, and France. This is quite natural. Those who come to an exhibition generally come with the intention of studying the local educational system, caring comparatively little for the education of foreign countries, which is already known to them. The school, and particularly the primary school, is so intimately connected with the conditions and customs of the country to which it belongs that it is necessary for the proper understanding of it to know something of the country itself, of its inhabitants, and to be able to visit personally some of its institutions. Since exhibitions have become so frequent, pupils and teachers would be losing valuable time in preparing for them. In the case of one's own exposition this is different, for it appears to those in charge of public instruction similar to a general examination with the whole nation for its audience.

Of the European countries, Russia, France, Germany, and England had arranged fairly good exhibitions. The first place must doubtless be awarded to Germany for the fullness, variety, and interest of its exhibit. The external façade of the building was very handsome. There were over 500 exhibits sent, representing primary schools, intermediate schools, universities, special institutions of all kinds, and the German department of public instruction. A very large collection of text-books, books, atlases, globes, wall maps, and other school appliances, work of pupils, and photographs completed the exhibit.

The second place belonged to the Russian school exhibit, which occupied five rooms. In the first room was the exhibit of the educational museum—a complete collection of school appliances, text-books, different editions, etc., all very tastefully and cleverly arranged by the distinguished educator, T. Tv. Guerd. Next came the room with the exhibit of the department of communication (roads), and the room containing private exhibits, conspicuous among which was a beautiful show case from the cartographical establishment of Illüne; a copy of the book of Mme. Altchevski, *What the People Should Read*; the section of the association for the extension of the Holy Scriptures, the calculating machine of Oder, the universal school bench of Professor Brandt, of the University of Charkoff, and the exhibits of the Technical Institute of St. Petersburg, etc. To the left of the second corridor were arranged two alcoves; one was occupied by the exhibit of the Central School of Technical Drawing of Baron Stieglitz, the other by that of the School of Drawing of the Society for the Encouragement of Fine Art.

Opposite to these was a large room devoted to the institutions of the Empress Marie. This department was in the care of Mme. Semetchkine, who is well known in America and who was at the Exposition in Philadelphia. The handiwork of women attracted general attention. The Demidoff Asylum for Working People in St. Petersburg had on exhibition a present intended for the President of the United States, a handsome scarf of red satin embroidered after an antique Russian design of the thirteenth century. For the wife of the President was a large sachet, on which was represented the arrival of the steamer *Leo* with American cereals in the unfortunate year of our famine. The majority of the exhibits of the department of



the Empress Marie were presented to the Americans as an acknowledgment of their fraternal assistance. Next came the room of the department of public instruction, the exhibit of which was very complete. The exhibit of the school district of the Caucasus was very complete and interesting. Here also were the publications of the imperial commission for the introduction of reading among the people.

France occupied three rooms filled with cases in which were displayed text-books, other school books, and the work of pupils. Of these last must be noticed the so-called "cahiers de roulement," in which each pupil in turn writes his school task. A book is received in which all the pupils of the class have taken part, and which gives the inspector a clear idea of the condition of the class and serves as a great stimulus to the pupils for carrying on their tasks in an earnest manner. Next to the room of the department of public instruction was the exhibition of the well-known Paris school "École des Arts et Métiers."

In the English division of the exhibition in the Manufactures Building was the exhibit of the city of London, of the science and art department which had sent the work of pupils, and of the University of Oxford, demonstrating the system of university extension. This system is known in Russia through the works of the Moscow professor, T. T. Yanjul.

In the Woman's Building, Great Britain presented many interesting things in regard to female education, principally the higher education; in primary education there was very little to be seen in this building. Very interesting and convincing was an exhibition of card photographs of the babies of some ladies who had received a degree in the English universities. The object of these cards was to show that study did not unfit women to be mothers. The proof was very striking, for the babies looked so well, so fat, and so full of life that it was a pleasure to see them, and the mothers by their side in their professors' caps had reason to be proud of them.

The attention of foreign educators and representatives of learning centered, after the United States, principally on the other American countries and colonies. The exhibitions of the two countries adjacent to the United States, Canada and Mexico, although placed side by side, were very dissimilar. The race characteristics of each were immediately apparent. The exhibits of Canada occupied several rooms. There were sections of public instruction in the different provinces, which are perfectly independent of each other in this respect; there were those of Catholic and Protestant schools, and those of private firms and individuals.

Among the provincial exhibitions the most interesting was that of the Province of Ontario. The department of public instruction of this Province had published for the exhibition a very excellent book, *The Educational System of the Province of Ontario*.

In Mexico public instruction has advanced considerably of late years, but the percentage of students is still only 4.7. In theory, education is considered free and compulsory, but in practice, particularly in the less populous States where the Indians predominate, compulsory attendance can not be enforced yet. Coeducation is found only in exceptional cases. The civilized Indians are taught with the whites. For those not yet civilized special schools are established, where the teachers are young Indians, taken from the same tribe and trained in institutions for teachers. There are in Mexico 2,878 Government schools for boys, and 1,079 for girls; mixed schools, 327; municipal schools for boys, 3,176, and 1,056 for girls; mixed, 503. Total, 9,039.

There are schools for the training of male teachers, and one in the City of Mexico for the training of female teachers. Besides these, there are in the country 2 agricultural colleges, 1 commercial college, and 3 technical schools for pupils of both sexes. Side by side with the public schools there flourish also a considerable number of private schools, principally under the direction of the Catholic clergy.

Among the countries of South America let us consider in passing the little Republic of Uruguay, which has given a good example of energy and perseverance in the



work of public instruction. Until 1877, when the law for general education was first passed there, the schools were in a very low state. There were only 412 schools in the whole country, and these furnished a limited amount of instruction. In 1891, the date of latest statistics, the number of schools had more than doubled, and the number of pupils was more than three times as great. Education was made free and compulsory; for the training of teachers of both sexes there were two seminaries; the teachers were twice assembled in educational congress; for the study of the latest subjects of investigation specialists were sent to Europe; an educational museum was established at the capital. The instruction in the schools is according to the latest demands in education. The school buildings are improved and well supplied; many have libraries attached to them. The number of pupils to each teacher is 36, which is not excessive. The country has one kindergarten and an industrial school. By the side of the public schools there are also private institutions.

In each department (the Government subdivisions of the country) is organized a committee of public instruction, the members of which serve without pay and each division has an inspector. The Government spends annually one-ninth of its income for public instruction; the price of the education of each pupil amounts to \$13.27. As a result of these efforts there is a great improvement in primary instruction. In the words of the report, “;El carácter de la enseñanza es educativo, racional, apropiado, rigurosamente gradual, y por lo tanto, progresivo, integro, armonio, vivo, agradable y, sobre toda, práctico á fin de que dicha enseñanza repose sobre bases solidas!”

To a Northerner this excessive enthusiasm and delight may appear naïve, but when the object of it is the education of the people we must respect it. Every country could be and ought to be proud of a similar success. The people of Uruguay must have remembered the words of the late President Garfield, that “Good schools are less expensive than revolutions.”

It would take too long to examine the other American countries, particularly since only a few of them (Brazil, Jamaica) had school exhibits; for this reason we shall content ourselves with the following statistical table:

Countries.	Population.	Pupils.	Per cent.
Argentine Republic .....	4,036,492	276,983	6.8
Bolivia .....	1,192,162	27,764	2.3
Brazil .....	14,002,335	305,193	2.2
Canada .....	4,829,411	998,823	20.8
Chile .....	2,766,747	122,664	4.4
Colombia .....	3,878,000	93,187	2.4
Costa Rica .....	238,782	17,500	7.3
Cuba .....	1,521,684	50,000	3.3
Ecuador .....	1,271,861	58,308	4.6
Guatemala .....	1,452,003	57,380	4.0
Guiana (British) .....	284,887	27,884	9.8
Guiana (French) .....	25,796	1,678	6.4
Haiti .....	960,000	10,000	1.0
Honduras .....	431,917	23,000	5.3
Honduras (British) .....	31,471	2,450	8.0
Jamaica .....	639,491	75,680	11.8
Martinique .....	324,462	18,073	5.5
Mexico .....	11,632,924	543,977	4.7
Nicaragua .....	400,000	11,914	3.0
Paraguay .....	329,645	25,594	8.0
Peru .....	2,700,945	71,435	2.0
Porto Rico .....	806,708		
Salvador .....	777,895	28,473	3.7
San Domingo .....	610,000	10,000	1.6
Surinam .....	53,968	5,684	10.0
Trinidad .....	208,030	19,685	9.4
United States .....	62,622,250	14,377,536	23.3
North Atlantic .....	17,410,545	3,694,067	21.2
South Atlantic .....	8,857,920	1,903,468	21.5
South Central .....	22,362,279	5,647,308	25.0
North Central .....	10,972,893	2,558,378	23.0
Western .....	3,027,613	574,315	19.0
Uruguay .....	706,524	65,621	9.0
Venezuela .....	2,285,054	104,840	5.0

The only province from Australia to take part in this department of the Exhibition was New South Wales. In the whole of Australia the number of students in the different institutions is 256,151, or 22 per cent of the population. The expenses of school education for each pupil amounts to \$18.65, which is a very high figure.

Among the Asiatic countries the exhibition of Japan was most interesting. The movement for better school organization began there comparatively late in 1872. The laws governing the present school system date from the year 1886. Owing to their natural power of imitation the Japanese have taken the European school system, and, after making some slight alterations in it, present it as a national one. The education is compulsory; it is nonsectarian and free, although the children of the rich pay a certain sum on entering the school. The number of pupils is considerable. The small number of girls in comparison with that of boys (less than one-third) shows that the principle of female education has not as yet taken root in Japan. The expenditures for public instruction reach the sum of \$9,000,000, of which 80 per cent is spent on primary education.

Of the other countries in Asia the Island of Ceylon had a separate building where very interesting ethnological collections were exhibited. In public instruction the exhibits were very few, although the cause of education is beginning to develop in this colony. To the north of Ceylon is the great Indian Empire. Here the work of education is still weaker, although on the whole it is making progress.

From Africa, Egypt took part in the Exhibition. The exhibits there were not large but interesting. In the city primary schools both English and French are taught. English language is used in 2,237 schools, the French in 2,840 schools.

In conclusion we must notice the exhibitions of some associations not directly connected with the work of education but whose activity is of a humanitarian character.

The Society for the Prevention of Cruelty to Children and the Society for the Prevention of Cruelty to Animals were fairly well represented.

An interesting exhibit was that of the Society of the Friends of Peace, which counts several millions of members and advocates peace, fraternity of nations, and the establishment of international courts of arbitration, and which is gaining so many adherents. Until the present time there have been seventy-five cases of arbitration between the people of Europe, Asia, and America, which have resulted in a peaceful solution of the difficulties. In 1890 all the States of America had adopted the principle of arbitration. The Peace Society of the last international congress expressed the wish to have this principle introduced in the study of history and to have the cult of war diminished.

The American Bible Society occupied considerable space. The extensive and energetic work of this society is known the world over. Its editions are printed in thirty-two languages, and the Bible published by this society can be found in the remotest parts of Siberia, as well as in the extreme north of Canada, in the center of Africa, and in the torrid parts of Asia.

Lastly, the exhibit of the National Temperance Union showed that the yearly amount spent by the population of the United States for spirituous liquors, tobacco, and stimulants exceeded the expenses for bread, meat, clothing, education, or religion.

With this we shall conclude our brief report on the educational department of the Universal Exhibition in the city of Chicago. This department was, on the whole, extensive, many-sided, and interesting, and embraced every possible kind of institution of learning. The grouping of the exhibits, the introduction of phonographs, the practical exhibition of school children at work, the model school building, the large part taken in the Exhibition by the clergy and by various associations formed its chief characteristics. \* \* \* The departments of foreign countries, particularly of new countries, "testified to the fact that the organization and proper maintenance of public instruction forms at the present time one of the chief cares of a government, and that the fundamental principles of gratuitous public instruc-



made with the most praiseworthy care. The last volumes of this work are in press and soon these fifteen great folios will form a publication which no medical library can afford to be without. Dr. Billings showed us at the same time the hall for the medical journals, the halls for card catalogues, and the rooms for the librarians—a model to imitate; an example which no one has followed in Europe.

#### MILITARY MEDICAL SCHOOL.

A few days after my arrival at Washington a military school of medicine was established for the young doctors recently appointed to the Army. These students will have, therefore, at their disposal a museum and library of the first order.

After detailed description of the principal medical schools and departments of the Northern States, Dr. Baudowin sums up his observations substantially as follows:

The study of the medical schools of the United States, taken as a whole, is a difficult matter. The institutions which may be grouped under this head differ so much, the circumstances under which they have been founded and are now developing are often so special in their nature that there is danger of falling into many errors and of expressing somewhat contradictory opinions if the attempt be made to describe these schools as a whole. If we consider also the extraordinary number of schools, which seems surprising at first, but is easily accounted for when one understands the general status of physicians in a country so vast, and where professional life is easily entered; furthermore, if one considers the facility with which institutions are formed or disappear, without leaving any trace, the simplicity also of their early organization, the various resources of which they may avail themselves—with all these considerations in view, he will understand the difficulty of making selections out of a long list, comprising colleges, medical departments of numerous universities, and sometimes mere factories for “bogus diplomas.”

However, to bring a certain clearness into this question, which seems at first so complicated, it suffices to examine it in the light of a single leading idea, namely, the basis of instruction in the United States, scientific as well as medical. I allude to the complete “liberty of instruction.” It suffices to remember that all instruction is absolutely free from Government interference, as was formerly medical practice also, diplomas being conferred by the most dissimilar institutions.

As everybody knows, in the transatlantic country it is private initiative which undertakes to furnish to the fifty States, Territories, or districts of which it is constituted, physicians, pharmacists, and dentists, as well as lawyers, engineers, and architects. The public authorities exercise a control so restricted that it may be called none, compared with countries where centralization reigns.

As regards medical schools, the States confine themselves to recognizing their creation by according to them a charter and registering the diplomas which they confer, without endeavoring to ascertain the intrinsic value of the same.

There are at present in the United States several kinds of medical schools. Formerly the classes were still more numerous, but some have been abolished, owing to competition, which increases every day.

The regular schools may be compared with those of the Old Continent, and which in our country are called “allopathic.” These predominate, and especially so at the present time, but in America, where some years ago homeopathy was appreciated by the majority of citizens about as much as the bonesetters in France, there exist also centers of homeopathic instruction which were at one time very important and which still enjoy much prestige. \* \* \* Among schools called irregular schools, there exist also other types. I refer to the eclectic schools (eclectic colleges), and the physio-medical schools.

The fraudulent schools, on the contrary, have totally disappeared. I will speak of them further on, but they are an invention which is dying out.



In the regular schools one principal feature is noticeable. Some are attended by men and women, and the students of both sexes are admitted to these without difficulty, pass their examinations side by side, as in Europe, and obtain their diplomas. A smaller number are exclusively reserved for young women students of medicine. These institutions have no analogy anywhere, and this is an American specialty which deserves more than simple mention.

But whatever the variety, all these schools are of an essentially private order; all have been originated by private individuals, and generally in the following manner: A very rich manufacturer or a successful speculator (there are but few other lucrative professions in the United States) gives from his fortune, and often although he has children (which is also a marked characteristic of the country beyond the ocean), considerable sums for the foundation of a university. First, very elementary instruction is organized; then, when other liberal gifts have increased the resources, professional schools are successively created—an important expedient for the graduated students—and rapidly enough a medical department. This was the case nearly three hundred years ago with Harvard University at Cambridge, near Boston, and has taken place at the present time in Worcester (Clark University), in Chicago (Rockefeller University), in Washington, San Francisco, etc.

At other times the practicing physicians of a city which is young but flourishing and with promise of a successful future together found a school. In this case it is ordinarily called "College of Physicians and Surgeons." It must be confessed that what prompts this action is the desire of the physicians to add to their title of doctor of medicine that of professor more than the wish to be useful to their fellow-citizens or to the future young men of the country. But what does it matter since these local attempts soon result in schools full of life and enthusiasm which become vigorous rivals of the older establishments. The latter are thus prevented from reposing upon their laurels and forced onward incessantly. These physicians write out statutes, elect a council of administration, and request the State authorities to inscribe the new creation in the official registers. This is seldom refused, and is equal to a regular authorization. Then prospectuses are freely issued in order to announce the new creation; the medical papers publish the course and the list of the professors, who but yesterday were simple physicians, more or less unknown. This is business; it must be hurried, and here, as everybody knows, the Americans are at home. Students come in greater or less numbers, and in the second year diplomas are distributed. Is not the good will of those who, from the very beginning, have shown confidence in the enterprise and in the professional ability of the young teachers, to be encouraged? The graduates are then permitted to practice medicine in the State where the school is established and often in almost all the States or Territories of the Union.

At first the resources of the school are limited, as the fees of the students and the sums given by the founders are the only sources of revenue. The buildings are rudimentary, and the laboratories poor and meagerly equipped. But if by chance some distinguished and energetic person has come into the corporation, reputation does not wait for the lapse of years, and endowments increase. Splendid iron and brick buildings are erected, dispensaries and soon hospitals are founded.

Thus, following the examples of similar institutions which exist in England, the principal colleges for surgeons and physicians in the Union have developed the old colleges of Philadelphia, New York, Boston, San Francisco, etc.

For some years past this liberty seems to have been a little restrained, and now in certain cities diplomas can not be obtained with the same facility. Everywhere, indeed, where boards of health are organized the parchments presented for inscription are carefully examined, and if it is discovered that the school by which they were issued confers them too easily, they are not registered. This occurred some years ago in New Jersey, and a college where the examiners exposed the fact that too much indulgence was shown toward students was forced to shut its doors.

The Illinois State board of health has endeavored with remarkable zeal to search out those institutions which are still questionable, and to this end it has published a prospectus setting forth the minimum of qualifications required from a school in order that it should be classified among those giving satisfaction. But, as may be imagined, many do not yet correspond to the required conditions, although recently very remarkable progress in this respect has been accomplished almost everywhere.

Moreover, since 1877, there has existed an "Association of Medical Colleges," which has succeeded in grouping together into a strong society all those schools which desire that the level of the studies should be raised. The statutes of this association are such that at present all the colleges that are members of it may be considered as representing sufficient guaranties, for none of the irregular schools can be admitted there. In a country like the United States one can not ask more, and this control of the institutions by each other is certainly excellent; all this is very characteristic of this extraordinary country.

Certainly I would not say that all these colleges are comparable to the European faculties, and that their diplomas are equivalent to those which are conferred in Germany, France, or in the cities of other European countries; but one must not ask the impossible; and in a country where superior instruction does not hold the first place it is not surprising that the students know a little less Latin or Greek than ours, and do not devote themselves willingly to transcendental studies.

At the present time North America possesses 122 regular schools conferring diplomas either on men or women; but of these 9 are exclusively reserved for women. With the 113 others must also be classed the regular post-graduate schools, which receive only students having already graduated, practitioners who desire to perfect their clinical instruction. These institutions may be compared with the German and Austrian polyclinics and other preparatory or special schools (schools for anatomy, etc.), upon which I can not dwell here.

The 113 regular schools, which I will now consider, show certain common characteristics. They are seldom installed in grand edifices. The most important, that of the University of Pennsylvania, in Philadelphia, is nothing more than a modest building of moderate dimensions. The same is the case in New York, Boston, San Francisco. Often there is only an ordinary building of four stories, with halls for lectures, laboratories for chemistry, physiology, histology. Frequently a dispensary is annexed and occupies a part of the basement. Almost always (fact to be noted) the hall for dissections is found at the top of the house. We may say: "They dissect under the roof." In this way, I am told, more light and air are secured, odors are not detected, and it is altogether more private. Naturally, the whole building is heated by steam, which circulates in pipes; it is lighted by electricity and abundantly provided with ice water, the beverage of the American citizen; no apartment for the dean, no imposing place for business transactions—nothing but what is necessary; a lodging for the porter, or rather for the watchman, for porters do not exist there.

All that does not belong absolutely to the medical department is consigned to the other buildings of the university. This explains also the absence of a physical laboratory, and also the rare appearance of laboratories of natural history. Moreover, physics is not taught in the American schools.

The budgets are very limited, save in rich institutions, which are admirably endowed, as Johns Hopkins Hospital in Baltimore; often, also, the future is discounted. Appeals for funds are never made to the Central Government or to the municipalities. Very seldom does the State in which the college is located intervene to make up the expenses (the principal exception is the University of Ann Arbor, Mich., which possesses an old and highly esteemed medical department); the official subvention is unknown. Anyone can be a doctor in a few years in the United States, contrary to the custom in our old Europe, where a very careful preparatory instruction is necessary in order that one should obtain the degree of doctor. In America one may be at 20 years of age a grocer or a farm boy, at 22 a journalist, at



25 a lawyer or a doctor of medicine. The medical career is a profession like any other, and the epithet "liberal" would not be understood in a country where only one thing is desired, namely, to gain with the greatest rapidity the greatest possible amount of money; where the effort is only to perfect one's self in his art in order to get still richer. Therefore, of course, no one thinks of erecting high barriers at the entrances to the schools.

This is the reason why admission into a medical college is so very easy. It is sufficient to have graduated from a secondary school which is approved by the State in which one desires to study; in other words, to possess a diploma corresponding more or less to our ancient certificate of grammar, or to undergo a very easy examination, which means simply it is necessary to know English and a little Latin. To sum up, the American physician must have a general education which is scarcely equal to that of our health officers.

The professional courses which the students must follow bear a close analogy to those which the professors of our provincial schools have to take. The lectures even at Philadelphia and New York hardly bear comparison with those in the faculties of Bordeaux and Nancy. In America there is nothing to be compared with the faculties of Lyons, and especially those of Paris. The theoretical courses are generally good, but elementary; the exercises in dissection are, as a rule, rudimentary. The practical work, except in chemistry, leaves also much to be desired. On the contrary, this is not the same with the dental schools, the triumphs of the United States.

There are no competitive examinations; all professors are appointed by choice. Almost all are young and enjoying an income which at first appears very large; but, all things considered, the conditions are about the same as in our own country. It must be remembered that life is expensive there; that pensions do not exist; that the long trips necessary in that country demand great expense, etc.

The Yankee student, who never forgets the watchword of his fatherland, "Time is money," desires to finish his studies rapidly. He takes without much complaint a number of courses, lectures, quizzes, and subquizzes, which are perpetually presented him from 8 o'clock in the morning until 5 in the evening, save Saturday evening, for, like the laborer, he holds fast to this vacation of half a day. Only he who desires to devote himself to a professorship in a large university, works from love of science, if not of the special art. The majority attend schools where they may get immediately to work, where nothing is very difficult. This explains the rapid success of all new enterprises. The clinic instruction is a little more serious, thanks to the luxury which prevails in the teaching of the specialties. There is no small school which has not special professors of laryngology, otology, rhinology, orthopedy, etc. In spite of that the final examinations are not brilliant. If they should prove too severe, it would frighten the student, who would hasten to join a rival school.

An important question for the future of American medicine and one which has already excited great discussion, is that of the length of the courses in the different colleges. Not more than ten years ago, in a great center, doctors were made in two years! But at the present time three years are demanded, with sessions of eight months each. Few schools require four years; but several advise their students to study four years. Evidently there is progress; but that is not sufficient. I willingly admit that the American loses less time than the Frenchman, yet I shall never believe that he can learn in three years what it takes us five or six years to impart. Four years' attendance would not be too long even in the United States. This would certainly be better than to be obliged finally to attend a post-graduate school, particularly as those who practice in the country never can profit by these advanced schools.

The post-graduate schools in America are organized like other schools, with teaching corps whose numbers surprise a European; but in reality, when the whole situation is learned, they are found to differ little from the German or Austrian polyclinics.



All specialties are taught in the post-graduate schools; and in those of established reputation, as those of New York, among others, are represented by teachers of undoubted authority. Unfortunately it is not the same in all cities; it has been justly stated that the professors are not always men adequately equipped for the functions which they perform. In these institutions which pretend to be superior schools for perfecting students, the corps of teachers ought to be picked from the very best. Complaint has also been made that the professors are sometimes induced to take their positions solely for money. In delicate matters like these it is necessary to look carefully at the results accomplished. Now, it is unquestionable that these post-graduate schools are of real service, allowing young doctors to complete their studies and to be better armed for the battle. It is not necessary to ask more—to hope, for example, to see them transformed some day into so many medical “*Colléges de France*.” Besides, the American, who especially appreciates the useful, would not make this his aim.

There are at this time 19 post-graduate schools; but only 15 of them are regular schools; 4 are irregular, 2 being homeopathic and 2 eclectic. The earliest were founded in 1882 in New York, Philadelphia, and St. Louis; there are also similar schools in Boston, Baltimore, New Orleans, and in other cities, which I have already mentioned.

One might well desire that in Paris some analogous schools should be organized, as we possess already all the essentials for this, thanks to the medico-chirurgical corps of our hospitals, but our customs and our extraordinary admiration for all ancient institutions will prevent us for a long time from entertaining this idea.

The other regular schools of medicine which we have still to examine are those which are exclusively reserved for women.

Whether familiar or not with the American customs and with the famous question of coeducation, the European physician does not understand at once the reason for, and the importance of, these creations. We are told that in the United States many young women wish to study medicine. Very well! But why do they not attend the ordinary schools, as from their earliest youth until leaving the high schools they live in intimate companionship with the young men, on the same “campus,” sometimes under the same roof, eating at the same table.

Why are they more particular than their comrades in the schools of architecture, even in the law schools, who have no college reserved exclusively for them? What is the reason of this sudden change of opinion in a country where the system of coeducation has been so freely extended? It is only by recalling what happened when women attempted to force the doors of those schools which they could not easily enter that one comprehends why these special colleges came into existence.

America is certainly the country where the problem of the woman doctor is to be studied; but it must not be supposed that in the beginning this little revolution in customs was accomplished without all kinds of opposition to the pioneers who sought to climb over the barrier erected at the entrance into the liberal professions by the most powerful half of mankind. At first the older American schools declined to admit young women. Such opposition might succeed elsewhere, but to suppose that it would do so in the case of Americans is to misprize their resources and the disposition of the women. Were the American women overcome by opposition? No. This would have shown unpardonable shortsightedness, an insult to the national genius! The outcome proves that in this country “What woman wills, God wills!” The women, resolved not to confess themselves vanquished, went to work with that patience the secret of which they alone know, which serves them always when they desire to attain a particular end. They did so well that out of the very opposition they secured the foundation of special schools, which at the present time have become rival institutions, sometimes dangerous rivals, if account be taken of the standard of studies in the other regular colleges.

The result of this is that at the present time the United States possesses 9 regular schools of this kind (there must be counted, too, a homeopathic school), which are

situated in New York, Philadelphia, Chicago, Baltimore, Minneapolis, St. Louis, Cincinnati (where there are already two), and Atlanta. I visited some of them, especially the most celebrated, that of Philadelphia, of which I secured a photograph. It must be admitted that this is one of the objective points in a medical transatlantic excursion. The first of these schools was founded at Boston in 1848. It conferred diplomas until 1874, at which time it united with a homeopathic school. The second in date, and the one which is considered to be the type, the veritable mother of all the women's colleges, is the celebrated College of Pennsylvania, in Philadelphia, which dates from 1850; the buildings were reconstructed in 1875.

These schools are almost as well organized as those opened to both men and women. Certainly the courses, which only last for three years, are not brilliant; the entrance examinations are easy, the studies elementary, the examinations on leaving somewhat weak. But is not this true also of the regular schools? Besides, the women follow the studies with the greatest regularity. A little uncertain of their power and ability, they make so much the greater effort, as they desire to raise still higher the standard of their emancipation and to prove that they are fully equal to their brothers and friends in the rival institutions. They have, moreover, a solid elementary education, often even more solid than that of men (this is the rule in America), and have shown on different occasions that they were able to face the combat and to get out of it with all the honors of war. The corps of teachers is never composed exclusively of women. In Philadelphia about half the professors are men. In New York, Chicago, and elsewhere the proportion of women professors is still smaller. Hence it would seem that up to the present time the number could not be fully supplied from female physicians. But this is not the sole reason; other considerations lead also to the choice of men. These schools conferred in ten years (1880-1890) 635 diplomas, a respectable number, which indicates sufficiently how important a position women physicians have reached in the New World. For the exact total we must add to the number given the number of diplomas conferred upon women by other regular schools. As to these colleges, it is undeniable that the fruits have yielded what the flowers promised. In America, then, the female doctor is no longer an exception; in a few years, in the cities at least, she will play a part which is as yet only suggested.

The history of the schools called irregular is not less curious nor less interesting; and among these latter some are so near their end that those who desire to know their character and their method must visit them as soon as possible. In a few years, without doubt, it will be too late. The fraudulent schools exist no more. So far as I have been able to ascertain, they were constituted by medical associations, conferring doctors' diplomas for money. Their students had scarcely to follow the courses for three months. They had at one time, it appears, a certain success. This could be easily understood; but I do not guarantee the statement. Certainly all this is now a chapter of very old history, at least for the Americans, at the rate things move in their country.

The physio-medical schools number only two, one in Indianapolis, Ind., founded in 1873, the other, later, in Chicago. That of Indiana is the type of these institutions, which are on the decline from day to day. The conditions for admission are the same as in the regular colleges, and the courses are comparable, although still more elementary.

These schools, it appeared to me, were more elementary than those of the other classes. Instruction in them is rather theoretical than practical, and the clinic exercises are reduced to the most simple form. In fact, I am not prepared myself to give any particulars, on account of the short time I was in Chicago (the courses are finished at the end of June). Other French physicians who have crossed the Atlantic have not been more fortunate in this respect. If I may venture an opinion, I should say that these schools do not seem to me to differ at all from the others except in name. In America, where simple minds abound, where all is industry and commerce, it is often sufficient to change the denomination of a ware in order to



give it a greater value in the eyes of the public. I am afraid that it may have been the same with the physio-medical institutions.

The eclectic schools are more flourishing, but there are only 10 in existence, namely, at Cincinnati, New York, Chicago, St. Louis, Atlanta, San Francisco, Des Moines, and Indianapolis. These institutions differ from the regular medical departments of the universities and colleges of medicine by the nature of the courses in medical subjects, therapeutics, and internal clinics. But the difference is only on these points, as in the homeopathic schools.

In these schools all metals, without exception, are excluded from therapeutics, or, as the eclectic physicians say, iron, potassium, sodium, mercury, etc.—all this is of no value; only the substances taken from the vegetable kingdom, such as extracts, tinctures, alcohols, balms, etc., have efficiency. As a matter of fact, this is not true, because it is demonstrated that metals have great efficiency. But where religion commences, science must not interfere. I must confess that I had not time to examine this matter for myself, but from what I could learn there seemed to me less difference between an eclectic school and a regular school than between the latter and a homeopathic school. The homeopathic schools are more numerous and more prosperous. In 1893 they numbered 17, of which 1, in New York, was exclusively reserved for women. There were, besides, two post-graduate schools of the same class. I do not exaggerate in saying that these schools are as unknown in France as the eclectic or physio-medical schools; all our classics are silent on the subject.

These schools are found in most of the cities of the Union, in New York, Philadelphia—where are the oldest and most celebrated of those which exist to-day—Cleveland, Chicago, St. Louis, Cincinnati, Boston, Ann Arbor (University of Michigan), Iowa City (State University), San Francisco, Minneapolis (University of Minnesota), Kansas City, and Baltimore.

This is not the place to explain the homeopathic doctrine. It is well known in our country and by the readers of the Scientific Review. I will only say that the ideas of Hahnemann, which were given out about the year 1790, have, in less than one hundred years, conquered a good part of America. For almost a century, the homeopathic schools have flourished in these places of liberty. \* \* \*

The studies in these schools last only for three years; but there are many pupils. In respect to everything outside of therapeutics the best known of these schools are equal to the regular schools. It is interesting to note that sometimes, as in Iowa, Ann Arbor, and Minneapolis, the homeopathic school and the allopathic school are represented in the same university, and that, accordingly, many professors are common to both schools. There are only special professors for the courses of medicine and clinics. For instance, it is frequently the case that there is one professor of obstetrics, rhinology, or homeopathic chirurgy.

I have in vain asked myself what difference there could be between an accouchement or an amputation performed in this or that manner. I have tried to enlighten myself on this point and I could not find a solution. No one could help me in solving the problem. It would be very interesting to compare the extraordinary success which homeopathy has, and especially has had, for some years in America with the indifference which it has met with in our ancient schools of unquestionable standing. In Europe it may be said there are no schools of this kind. The physicians who devote themselves more or less to this profession have undergone the examination in classics before our faculties, and have instructed themselves in the doctrine and its applications in some hospitals of limited number and little importance. In the United States the homeopathic colleges confer diplomas which have the same value as those of the regular schools, and which enjoy indisputable consideration from the public authorities.

Taking all together and adding to the institutions we have already mentioned 10 preparatory schools or annexes of little interest, there existed in the United States in 1893 (I state intentionally the precise year, for probably in 1894 the number will be different on account of new creations or shipwrecks) 181 medical schools, of which



152 conferred diplomas, located in 68 cities. The territory of the United States maintains at present 70,000,000 inhabitants; this gives, in round numbers, a center of instruction for 400,000 inhabitants and 23,000 square miles. If one compares these numbers with those furnished by French statistics, it appears that we have one school for 1,600,000 inhabitants and 10,000 square miles. The Americans possess, therefore, four times as many schools as we in proportion to the number of inhabitants of the two countries.<sup>1</sup> This manifest excess is easily explained by the "liberty of teaching," and by the desperate competition between the schools. This explains, also, why in America colleges fall to pieces like castles of cards; become bankrupt sometimes after long years of financial prosperity and normal success. Within one hundred years more than 100 schools have gone down on account of this evident disproportion between the needs of the country and its means of production—between supply and demand. It is also one of the causes of the weakness of the courses.

In spite of this, in proportion as the unsettled regions become peopled, new centers of instruction will be created in the East and the far West. The average number of doctors furnished by each school seems also higher than that of the European schools. This proves that we exaggerate a little if we follow exclusively the statistical information in order to judge of the causes and the effects of this multiplicity of schools.

I could not learn the number of scholars who attended these centers of medical instruction in 1893, but I could get the number for the school years 1880-81 and 1890-91. They are eloquent enough to be quoted. In the year 1880-81 there were 11,864 students of medicine in the United States, of whom 9,750 were in the regular schools, 1,234, 826, and 54 in the homeopathic, eclectic, and physio-medical schools, respectively. For 1890-91 I noted in all 14,884 students, of whom 13,044 were regular, 1,128 homeopathic, 661 eclectic, 51 physiomedical.

It is evident that these statistics, which are very exact, permit us to make a fair conclusion in the sense indicated in this article. There can be no doubt that these regular schools are progressing. The increase of 3,000 students in ten years is a sufficient proof of this. It is, furthermore, beyond doubt that the irregular schools go down from day to day, that the physio-medical schools exist only in name, and that the eclectic colleges are not flourishing. As to the homeopathic schools, in respect to the number of students they make a good showing.

Let me add, also, that the surprises and the easy pleasantry of the beginning of my voyage gave way in time to something of pity and benevolence. In this dizzy course which America has followed in the matter of public instruction the whole nation has shown the resources of its indomitable energy, and especially its love for liberty. As wealth and power increase it appears that the ambition of the rich who have founded fortunes must turn itself toward the culture of mind. This is the right way. Let us congratulate America. The end is perhaps distant, but with the ability Americans have in overcoming distances it must be attained soon.

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<sup>1</sup> Chicago alone has 17 schools. At St. Louis there are 8 regular schools.



## CHAPTER VI.

### NOTES AND OBSERVATIONS ON AMERICAN EDUCATION AND THE EDUCATIONAL EXHIBITS, BY THE ITALIAN, SWEDISH, DANISH, AND RUSSIAN DELEGATES.

CONTENTS.—“*Popular education in the United States,*” by Luigi Bodio—“*Education in the United States,*” by A. Ghisleri—“*Observations concerning American education,*” by Dr. E. Österberg—“*Studies on the educational exhibits at Chicago,*” by N. G. W. Lagerstedt—“*Notes in regard to the World’s Congresses,*” by Kirstine Frederiksen—“*Some characteristics of the educational exhibit of the World’s Fair,*” by Eugraphie Koralevsky.

#### POPULAR EDUCATION IN THE UNITED STATES.

By Signor COMMENDATORE LUIGI BODIO,

Director of the Royal Statistical Bureau, Rome, Italy.

I had the good fortune to visit the Exposition at Chicago during the autumn of the past year (1893). One of the most vivid and profound impressions made upon me during the fifty days passed in the States was produced by the prodigious activity among the people. What interested me especially, within the Exposition as well as without, was the organization of public instruction, so that to-day my intention is to say a few words in regard to the American elementary schools. The attendance upon the public schools is three times as great as in Italy. The number of persons enrolled during the year in Italy in proportion to the inhabitants is  $7\frac{1}{2}$  per cent, while in the United States the average attendance is 20 per cent. The countries of Europe which are the best supplied with schools stand between these two extremes. In France the enrollment in proportion to the inhabitants is  $12\frac{1}{2}$  per cent; the per cent is similar in Austria; in Prussia it is 18 per cent; in England and Wales, 17 per cent. The schools in America are housed in more spacious buildings than elsewhere; the salaries are greater than anywhere else, so that the expenditure for the public elementary school in America to each inhabitant is not only more than three times as great as in Italy, as is the case with the enrollment, but it is six times as great. Among the Italians the state, the communes, and provinces expend 62,000,000 lire (the ordinary and extraordinary expenditures included) for elementary instruction—that is, 2 lire (38.6 cents) per capita of the population of the Kingdom—while in the United States the expenditures amount to \$146,000,000—that is, 12 lire (\$2.31) to each inhabitant. Salaries of male teachers average 4,500 lire (\$838); of women teachers, 1,500 lire (\$275); the women form about 65 per cent, the men 35 per cent of the whole number of teachers.

The methods employed in carrying out the laws pertaining to obligatory instruction are dissimilar to those in America. In the city of New York 12 inspectors had charge of this phase of the school question, and it is no rare thing to see a police-



man (truant officer) who, meeting a boy upon the street during school hours, questions him as to his being a truant, conducts him to his home, and finds out the reasons for such absence; if it is found that he is playing truant, the justice of the peace disciplines him by placing him in a reformatory. \* \* \*

The rivalry between the States is such that each one desires to have the best school buildings, the best methods, the best text-books, and the best hygienic conditions, and the reports published annually by Commissioner Harris are a guide toward improvement in all directions. Anyone entering the American schools is impressed with the general cleanliness, the perfect order, and the sentiment of self-respect which pervade the atmosphere. The best arrangement of rooms, of windows for light, the best means of heating and ventilating, are studied. Then there are seats, one for each pupil, revolving chairs, slates, and blackboards, so that not more than two children work in close proximity to each other, and there is no crowding. The children by turning about on their chairs can direct their view to any part of the room. There is no need of hiding anything within the desks, and so the school, by the very arrangement of its furniture, becomes a means of forming a loyal character and of rendering the pupil alert, self-reliant, and respectful in bearing. Each school has a central room in which the classes congregate when entering and leaving. In silence and with a composed bearing, children of both sexes march along. The teacher leads the march by playing on the piano and a patriotic hymn is sung, but there are no orders given as to the marching. On entering and leaving school the same method is employed; girls to the right, boys to the left, is the mode of march. The sight was one that moved me greatly, as if it were a generous action for the honoring of humanity.

Truly, in the school is found the future of this wonderful people. I do not speak of the object lessons which are practically carried out in every school, and which habituate the children to reflect, to formulate thought, and to comprehend the matter studied. The elements of botany, for instance, are taught in such a manner that each child is supposed to form for itself a small herbarium. Rewards are not given at the close of the year to the pupil who has distinguished himself the most in his studies. There are examinations, however, if the teacher has refused promotions to the pupils, the parents may demand a formal proof, the examination being therefore a kind of court of appeals.

Drawing is an essential element of the primary school course, the students, both boys and girls, become first experts in drawing, then in reading, writing, language, natural history, etc.

Moreover, there are normal schools for instruction in drawing and the plastic arts; a remarkably fine one is found in Boston. Drawing is considered as a means of learning and of communicating thought, and not alone from its æsthetic side; drawing is, so to speak, an alphabet for expressing the conceptions. The children are taught to come forward and in the simplest manner to sketch on the boards celebrated men, figures from natural history and from political history, or, again, they may be asked to illustrate a poem, such as Longfellow's *Evangeline*. Another means of illustrating the lessons given is by the magic lantern, with which landscapes, colored pictures, etc., are thrown on the canvas.

Still another form of instruction is noticeable in America; this includes manual training schools, where the shops and the forge for boys, cooking and sewing for girls, alternate with lessons in history, geography, English, German, and Latin languages.

The elementary schools in general have eight years in the course. It can well be said that for the duration of the course, and for the methods employed in utilizing the time allowed, instruction is organized in the United States on a rational basis; more than this, it is liberal and democratic, as it procures for all a minimum of culture, which gives the people a high grade of cultivation as compared with many of the European peoples. The school is really the people's school, and the American

nation may well be proud of it. One recognizes at once how strongly the people feel in regard to the school question. In the educational department of the Chicago Exposition one of the Western States—Dakota, if I remember rightly—had pasted above the entrance “Education is the cheaper defense of the country.”

## EDUCATION IN THE UNITED STATES.

By Prof. A. GHISLERI.

### MUNICIPAL SCHOOLS OF NEW YORK.

The agreeable impression made upon a person visiting the schools of America is enhanced by the well-constructed, well-ventilated, and well-aired buildings. The number of such buildings would indicate that American architects had made a special study and established a certain type of edifice, thus solving the problem of simplicity and commodiousness in all respects, hygienic and pedagogic as well. In the school buildings, as in all public edifices, there is no Cerberus guarding the door. In some of the schools a bright, active youth fulfills the duties of custodian, possibly for the day, and conducts you without any formality to the gentleman or lady principal. In each room is a placard indicating the maximum of pupils who can be accommodated. This serves as a guide to teacher and pupils, and in case of an excess of numbers they refer to this in their appeal to the authorities. In the school which I visited 45 pupils was the maximum. The rooms are not large, for in New York the ground is costly, but they are high, and the heat and ventilation are modified according to wish. No room contains the long bench or desk, with the stationary seat, incommodious and antididactic, which is to be found in about 80 per cent of the schools of Italy, the secondary technical and classical schools included. In the cooking schools each pupil has her own seat and desk; in the other rooms two pupils are seated together. The desk is movable and inclined and permits the child's free movements; the seat turns on a screw, so that each pupil can move about from right to left as he desires without disturbing his neighbors and can bring himself into proper relation with the blackboard. The blackboard is not found resting on an upright frame, where it occupies space and intercepts the light, but the walls of the room are literally lined with these boards, and the pupil can draw his exercises upon the boards without disturbing any one of his companions, and they in turn can follow whatever the teacher jots down upon the boards by simply turning about without even incommoding one another. But for exercises in arithmetic, for drawing, and for such exercises as all the pupils ought to carry on simultaneously, there are slates in use from the first class on. Socratic and objective methods are in vogue, and by means of illustrations and exercises, in all of which the whole room joins, the teacher and pupils are, in a measure, carrying on a type of spontaneous conversation or interchange of ideas. Another valuable feature is that the teacher has no special chair or desk. In Italy such a desk is raised from the floor; but the American teacher moves about from place to place, and the arrangement of the revolving seats gives the pupils opportunity to follow him in whatever explanation he may be giving on the blackboards or by other means of illustration. I have every reason for believing that when I visited a group of schools on Greenwich street my visit was entirely unexpected, and yet I found the teacher standing before the blackboard, or in the midst of the pupils, all of whom were turned toward him, and it seemed as if I had interrupted an interesting dialogue in which all were participating. This method of instruction by moving among the pupils and conversing with them so engages the attention that it seems unnecessary to have any special means for keeping up discipline. The pupils, being visible from all quarters, have no opportunity or desire for concealment, and thus the school, by the arrangement of desks and chairs, becomes in itself an instrument for the formation of a loyal character and for the foundation of freedom of deportment.



Each school building has a central room, or hall, where the classes meet when entering and leaving school. From 400 to 800 pupils may come together there; it all depends upon the size of the school. The hall is so furnished with seats equidistant from one another that such a number of children find their places or leave the room with the greatest ease. The signal for the march is given on the piano, and two by two they fall into place, singing a patriotic air or repeating verses of a nonsectarian character, the girls to the right, the boys to the left, and march along to the entrance. It is truly an interesting sight, as if with their songs they were honoring humanity; and the unembarrassed and unassuming deportment of the American school children—always confronted me and led me to meditate as to the causes which brought this state of things about.

One thing which seemed to me essentially American is the fire escape, to be used only in case of fire. By these fireproof stairways the three to eight hundred children were supposed to escape in case of fire, and in each room a doorway led to this stairway. American forethought does not end there. It would be humiliating to indicate how many (or how few) schools in Italy, even in the most populous districts, are furnished with these means of safety. If an architect were to make such arrangement, the doorways and stairways would be absolutely hidden from the pupils' vision. But the practical spirit of the Americans goes further; it includes the practice (twice a month) in the use of these fire escapes; the signal given, the pupils move with the utmost celerity toward and down the fire escape, and in a moment are in the court or on the street. These movements are supervised by the teacher, and, oftentimes repeated, bring about precision and perfection of discipline. The parents themselves have less fear for their children, knowing that they are well drilled for such emergency. Here again another aspect of the American school impresses one, to wit, the courage inculcated and the quickness of thought necessary for any occasion.

There are no decorations in the class rooms, but in the central room, where all are congregated together, there are busts or pictures of Presidents of the Republic or other ornamentation. Atlases, diagrams, natural-history charts, etc., are not lacking in any school building, but they are not found in conjunction with the blackboards. These stand forth in their plainness, which is only broken in upon by the necessary door and window frames. In pedagogical fields, as in other fields of action in America, the effort is to obtain the greatest results with the minimum of means to such end. Geographic maps are closed up with wooden casings, each containing a series, so that they can be moved from room to room as they are wanted. They are so arranged that they can be hung up and opened to the map desired, while the other maps still remain encased. Pictures, models, and other objects required in the studies pursued are kept in cases, and simply placed before the scholars when needed. Thus one picture or model can be used in different rooms, and is kept clean and in good order. The pupil, too, does not have his attention distracted from day to day by these aids to study. In Italy these wall maps, etc., are always stationary on the walls. The pupil profits more by seeing these maps, diagrams, etc., only when needed for use, than if they were before him every day. \* \* \*

Some of the newer American cities, like Chicago, St. Paul, and San Francisco, have arranged their schools according to the very newest methods, and their programmes have theoretico-practical innovations in accordance with the latest pedagogical developments. In comparison with our Italian schools many comments and suggestions might be made, but I will limit myself to stating that in none of our scholastic institutions is the programme of study carried out practically from day to day as it is in the American schools. We have programmes, decrees, and regulations which are excellent in themselves, but even the ministers and Congress seem unable to carry them out, as, for instance, in the case of the laws of compulsory education. In America the regulations are few in number, precise, and clear, and they



do not suffer all sorts of changes and interpretations on the part of principals and superintendents, and these regulations indicate what is really carried out. Consequently one observes that the schools are really advancing more rapidly and earnestly than one would surmise from a mere reading of their programmes.

The public schools of New York and most of the larger and smaller cities are administered by a local school council. This council has different names (school committee, school directors, school commissioners, school board) in the various States and cities. The methods of electing the members, the number of them, and their duties vary also; still their aims are identical, inasmuch as they represent the wish and opinions of the people. Boston has a school council of 116 members, and this is one of the largest. In some States women are members of the school board; in other States their names may be used even if they can not be elected. A few cities have the members appointed by the mayor instead of being elected by the people. Among these is New York, which can not in this respect be regarded as possessing the genuine type of school organization of North America. Still this is the city which, through immigration and its commercial connection with other countries, is most affected by European influences. \* \* \*

The New York City school board has a superintendent as aid, who corresponds in part to the "provveditore general" of Italy. His authority, from the moral standpoint, is great, and he is generally a person of special culture, expert in educational affairs, and known to the public as of indisputable pedagogical and literary merit. \* \* \* The superintendent has manifold duties, which include inspection of schools, assisting at the examination of teachers, selecting educational apparatus, deciding in regard to repairs, revising accounts, making a report at close of the year, etc.

In order to correct an error which has been often repeated by men of culture, by ministers in Italy, and by Italian educational journals, it is well to state that the primary and grammar schools of the municipality of New York are gratuitous. The school tax (*tassa scolastica*), as it is referred to in some of the States, is simply a tax on real estate, etc., to be paid by all real estate owners, even bachelors. This tax is similar to the communal tax in Italy. The term "school tax" is used because the fund is raised for school purposes. But school registration is gratuitous in all the States. There is no tax [or fees] for entering on the courses, nor for examinations; and more, the city authorities in New York furnish books, pencils, and other needed articles to the poorer pupils, spending considerable amounts for the same. \* \* \*

Elementary education in New York State is obligatory, by law of 1875, for all children of 8 to 14 years of age, but in order that this law may not be a dead letter on the statute books (as it is often in Italy) 12 agents (truant officers) are paid expressly for the purpose of watching for children who are inclined to shirk school privileges, and to so notify their parents. If the child is incorrigible he can be sent to a reformatory.

In order to thoroughly understand public instruction in the United States it is necessary to state that, while the public schools represent a great factor in education, private institutions also add their quota to the cause. Among these private institutions are many aided by societies; those for orphans, provided for by the Children's Aid Society, some of which have special funds; others receive subsidies from and are under supervision of the municipality. In Leonard street I visited three Italian schools maintained by the Children's Aid Society. I found a fine four-story building made of stone and brick and situated near the Five Points district. This district is peopled by many of the Italian emigrants, and squalor and misery reach their very doors. Established in 1856, this school consisted of 40 pupils gathered together in a basement; it now has 700 pupils and is opened day and evening to children of both sexes between the ages of 5 and 15 years. In the evening adults receive instruction. The attendance is quite regular, except in the spring time, when many are obliged to

go away from New York to work. During the winter a midday lunch is given to the pupils and also garments, if needed. The society provides for newsboys or other youths who have no place to sleep. The programme includes studies from that of an infant school and a primary course to instruction in printing, domestic economy (cooking and sewing), while the elements of politics enter into the course in a study of the Constitution, and the pupils are taught to speak and write English. One of the teachers, an Italian, informed me that many Italians who hold excellent positions and are much respected were originally instructed in this school. This practical charity is entirely a work of Americans, and is so nonsectarian in character that many of the emigrants had images of the Virgin and of the Saints in the class rooms. Of the other two evening schools, one has 300 pupils from the Neapolitan provinces, and from all these schools the children are sent annually, if they need it, to rural districts or to the seaside for recuperation.

The schools of New York are open to colored and white pupils, who are educated together, and the former seemed as well behaved as the white children. Instruction is given in evening schools to more than 20,000 persons who are at work during the day. While there is often irregularity of attendance, the pupils seem to appreciate being taught.

Free lectures on hygiene, physiology, natural sciences, geography, description and travel, history, literature, and social science are given annually under the auspices of the board of education. The 200 to 300 lectures are given in half a dozen of the grammar schools on Mondays and Thursdays, in the evening hours, and were it not that it would lengthen this article too much I would like to give a résumé of some of the lectures, which in 1892-93 were listened to by 130,830 hearers. \* \* \*

In regard to teachers' salaries I desire to correct the erroneous impression which is entertained by many, that on account of cost of living in America a dollar may be reckoned as an equivalent for a lira (19.3 cents) in Italy. This is not true, for meat, bread, fish, sugar, coffee, etc., in fact the daily necessities, are no higher, in proportion, in New York than in Italy. However, certain luxuries are more expensive. House rentals are not so much greater for the people who are not obliged to live in the centers of business in American cities; these rentals and lodgings average the same as equivalent rentals in Italy. The salaries of teachers permit them, however, to pay out for their own improvement (such as the buying of books, subscribing for periodicals, trips to teachers' associations, etc.) more than could be done in Italy.

#### IMPRESSIONS OF SCHOOL EXHIBITS IN CHICAGO.

The grand educational division of the Exposition at Chicago thoroughly confirmed the impressions of school life in New York. Here at the Exposition one could learn much of the rivalry concerning schools, methods, progress, and the sacrifices made to bring about such advance in all the States of the Union. This noble rivalry merited profound study from its psychological aspect, if it were only to discover the methods of this wonderful nation. I did not linger in the educational exhibits from Massachusetts and Illinois, two States which, as regards education, rival New York, but in those from the far West, which only about thirty years ago was like a desert entombed in prehistoric times, the eloquent result of whose progress furnishes one of the most characteristic presentations offered in the Exposition. The oldest of the far Western States is California, which may well be pleased with the statistics presented. \* \* \* The most important city in California, San Francisco, is reputed to have one of the most perfect systems of public schools, and it does not hesitate to consider itself a rival of the older cities, New York or Boston.

To pass to a State newer in point of development. New Mexico reports as follows in regard to its progress; the statement is modest in quality, but no less noticeable for the spirit and method displayed: By law of February 11, 1891, public schools were established, and a school tax for the construction of school buildings was authorized. From that date to December 31, 1892, there were 532 schools established,



557 teachers employed, 28,291 pupils enrolled, and an average daily attendance of 23,151.

It is well to say here that all the States presented educational information in the form of reports and diagrams or tables. Sometimes these last were printed on leather, with gilt figures. The American people, who are parsimonious in their bureaucratic expenditures, are very lavish, with an almost patriarchal tendency, in their expenditures for schools and schooling. There were frequently pictures and photographs of pupils taken during the lessons. Numerous were the photographic reproductions of school buildings, of the internal arrangements, of the grounds, of the picturesque localities in which the schools are situated. The newer States, that is, those which have most lately come into the Union, seemed to vie with each other in their efforts to make a fine school exhibit. Among the most noticeable exhibits, in point of externals, was that of Colorado. \* \* \* Most noticeable was the earnestness of purpose manifested in presenting a facsimile of the first schools established in the Territory, with a portrait of their founder and principal, and of the best-known teachers. To thus furnish a record of the humble origin of the schools in one of the last States to enter the Union surely indicated an intention of doing all that is possible to place it on a level with the older States. Colorado, with 412,000 inhabitants, has 65,490 pupils enrolled in its public schools and 7,072 in the private schools. \* \* \* This State has founded a magnificent normal school which indicates the serious intention of those who established schools to provide the best-trained teachers for them.

North Dakota interested me exceedingly. Its school exhibit had over the entrance, "North Dakota has 3,000,000 acres of fertile school lands." Various laws of the Federal Government have been the means of bringing benefactions in the shape of school lands; colonization and increasing value of such lands produce a school patrimony which the different States make use of for their schools. \* \* \* This State has two normal schools for the instruction of teachers, and in the exhibit it was noticed that the State had made use of the best that progressive pedagogical methods could suggest. For example, I noticed the application and use of drawing or illustration as a means of assistance in all lines of pedagogical endeavor. Glancing at a synopsis of Greek history, I found upon the first page a drawing of three columns with both shafts and capitals. These were not made for the mere presentation of a drawing, but to record an idea. These columns represented the three styles, Doric, Ionic, and Corinthian, and here, even before the children learned aught of their history, were three simple presentations indicative of the art and culture of the Greek people thoroughly impressed upon the minds of the pupils, and in a manner which they will never forget. They may become bankers, commercial men, clerks, dealers in pork, sailors, or agriculturists, and yet they will never fail to recognize nor even become embarrassed before any representation of Hellenic art, the nationality and style having already been brought clearly before them. What a number of useful things are recorded, as it were, from the association of ideas brought about by the grace and simplicity of the three columns drawn before commencing the work of a synopsis connected with school work.

A few pages further on was a map on which the rivers and mountains, and the various subdivisions were left unnamed and bore simply numbers which were explained at the close of the page. Still another chance for reflection! Not a word of geography to indicate what was intended, but simply blanks for the children to fill in or by word of mouth to indicate to the teacher the various places, mountains, rivers, etc.

The school exhibit from Minnesota was especially fine, particularly that devoted to St. Paul, which is cited as a model. Here was introduced a plan of throwing the object to be exhibited upon a screen by means of the magic lantern. Thus the pupils were trained to observe the correct coloring of landscapes, costumes, and general subjects, while the instructor gave explanations which made the subjects of



history, geography, etc., most clear to the pupils. In the normal and practice schools of Trenton, N. J., the geographical exercises were most noticeable; but some of the subjects under discussion in the normal schools will be spoken of elsewhere. The study of botany was most practical; the text-books used (Apgar's New Plant Analysis), after giving the requisite terminology and the general classification, presented a number of pages, partly blank and partly printed, which were to be filled in by the pupils after the plants were properly analyzed. The text consisted of the most simple explanations when compared with the complicated presentations in our [Italian] text-books. This can be thoroughly understood when one learns that the American school is founded essentially upon the instruction given orally by the teacher, who thus cooperates with the pupils in all grades from the lowest to the highest. In addition to this, the pupils have blank books in which they draw well-known plants and flowers from nature. \* \* \*

I studied at some length the object lesson and the methods employed in normal schools, so as to become thoroughly imbued with the system and spirit dominating in these important institutions, the graduates from which to become teachers in primary and grammar schools—that is, in the people's schools of the United States. The woman teacher commences always with a drawing, if she has a special object to present to her pupils. Thus, at the same time that she is explaining the lesson she brings before the pupil an illustration placed on the blackboard, which illustration serves to conduct the pupil by degrees through the intricacies of quantity, space, and time (i. e., in arithmetic, geography, and history), if she is conducting a special lesson in these subjects. Similar lessons actually take place in the practice schools connected with the normal schools; the pupil teachers point out the observations which they have made during the lessons, and it is curious to observe in these compositions or synopses what caused the greatest embarrassment and difficulty to the pupil students. Observations and questions put to the teachers are also included in these books. The teaching is Socratic and experimental.

In a volume of compositions I read three concerning a "Comparison of the local government in New England and Virginia," and, as a result of my curiosity, I am firmly impressed with the fact that the Americans are thoroughly persuaded of the superiority of their local government. As additions to the history lessons there are pictures of the house of William Penn, in Philadelphia (if he is the subject under study), or of General McClellan (if the campaign of the James River is under discussion), united to topographical illustrations of the principal events of that campaign. This method of illustrating the subject under study is universal in America.

\* \* \* In the same school volumes of art pictures were displayed \* \* \* which contained reproductions of the most celebrated painters, Michael Angelo, Raphael, Giotto, Rubens, and of the most distinguished sculptors. This seemed to me a most excellent idea from the educational standpoint, because such a collection served to inculcate knowledge, to train the eye, and to contribute to form good taste. \* \* \*

As a continuance of this there were historical scenes and pictures of persons, the dates alone being given. The physiognomy and the general type are supposed to be enough to indicate who the personages are. Even upon the base of the public monuments erected to statesmen or generals of the Union it was rare to have the names given. As specimens of graphic art, I was not favorably impressed—in fact, I was amused at first, for it seemed to me that this was intended as a joke to pass away the time, and that as scholastic work it was lacking in historic precision and aesthetic taste. But when I came to reflect upon this matter, and when I recognized that this was not the result of a teacher's hobby, then I began to understand the general underlying principle, and that the intention was not to make an art study, but that the exercises had an entirely different scope. To-day in America, drawing for the purpose of illustration is an indispensable part of instruction.

The study of fine arts as such is very different from the drawing or illustration which becomes, as it were, the basis of universal elementary pedagogy. In this our

inferiority appears, for, proud inheritors of classic civilization, we regard drawing as a means of illustration, to be an art reserved for only a few vocations, and we only recognize instruction in it as an immediate end toward some professional, industrial, or æsthetic occupation. But in the American schools drawing has the same value as the alphabet or writing, and as all pupils, even if they do not wish to follow a literary profession, must know how to use alphabetical characters in order to signify their ideas, so they must know how to use that other universal language, drawing, as a means of expression. This is the reason, then, that from the kindergarten upward all children have to draw in the simplest manner such objects as surround them, domestic animals, flowers, machinery, buildings, maps, the plan of a city, portraits of eminent men, artists, and patriots. It is not of so much importance whether the drawings are well done, whether they are done by pencil or crayon; the main object is that they serve to make an impression on the mind. Thus, like the alphabet in its conditions, they form a language of which all can make use. It is easy to comprehend that with these sketches, made as an aid to the study of geography, history, natural sciences, the Americans, following out a child-like instinct, succeed in diverting themselves by illustrations, so that the school is not only advantageous from this standpoint, but has its amusing side. By means of this method the images or representations of men, facts, deeds, etc., are impressed upon the memory so that they will never be forgotten. And as all things are linked together in this fashionable and working world of America, so, after having investigated many school documents, I was not surprised to find at the World's Fair every day, especially in October, girls and boys, both morning and evening, drawing in their copy books representations of whatever they saw which interested them most, and which they wished to retain in the memory. Naturally, this universal application of drawing has special tendency toward the schools of arts and trades, but to enter upon a discussion of that branch would extend this essay to an undesirable length. \* \* \*

Liberty and variety! Thus may be described the pictures, drawings, etc., on the walls of the technical schools—figures, animals, landscapes, copies of other pictures, all free-hand work. Nothing conventional! No drawing which had not been brought before the senses, which was not a reality to the pupil. Such is the character of the American school in divers forms of instruction. The themes given for discussion in the high and normal schools seem to me to follow the same general trend. Real live topics are given. I write down a few: "The crisis in France," which strange title induced me to read two or three compositions to see whether "the Panama scandal" or some other subject had been discussed by these pupils of 15 to 18 years of age. There was no attempt at rhetorical effect, but simply a collection of facts, which immediately led me to wonder whether the students had read journals and reviews on these subjects, or whether they had closely watched the politicians of the country of which they were writing. As for the comments made, they attributed the facts of the Panama scheme to the excess of confidence which the people had in Ferdinand de Lesseps, and to the fact that a privileged few (privilegi) had control of that undertaking. The impression made upon me was almost puritanical in its monitions, for it implied that there must be no deviation from the severity of the laws toward any citizen. Other subjects discussed were: "The banking question," "Should the World's Fair be opened on the Sabbath?" "The silver question." These live questions, treating of the politics of the day, of the functions of public officials, were discussed in the public schools, and were a part of the system of that education which forms the youth to be a citizen and prepares him for practical life. How different that is from the passive, conventional, traditional, and bureaucratic type of our [Italian] schools, where the individuality of both pupil and teacher is held in abeyance.

There are many other observations which I would like to jot down, in order to demonstrate the liberty accorded to the teacher in the American school, and to



point out the progress and efficiency attained by the methods employed in the American school. But the system is so different from the Italian system that it is difficult to present the subject in a few words. I shall be glad if these few notes be the means of inducing others, more competent than myself, to make a profound study of the society and institutions of that young continent, which in so many particulars has already to-day placed itself in advance of the older European civilization.

#### OBSERVATIONS CONCERNING AMERICAN EDUCATION.

By Dr. E. ÖSTERBERG (of Sweden).

The observations recorded in the following pages were made on a trip to America during the summer of 1893. Dr. N. G. W. Lagerstedt and myself were commissioned to examine the educational section of the great exhibits at the World's Fair in Chicago, and to take part in the pedagogical congresses.

Dr. Lagerstedt has given an account in this journal<sup>1</sup> of these congresses, so that I limit my remarks on that subject. The discussions in these congresses proved that there is a great deal of vitality and interest kept up among American teachers, and that pedagogical questions are generally and earnestly studied. I may also mention that American women took a very prominent part in the discussions of the congresses, a natural feature, since the teachers of the United States are largely women, who are recognized as teachers even in higher schools and universities. Some of the most impressive discussions, especially those relating to moral instruction in schools and coeducation, were conducted by women. Another noticeable trait is the harmony apparently existing among the teachers, without regard to the higher or inferior positions occupied in the school. The congresses took into consideration all the various stages relating to instruction, from the kindergarten to the university, and the separate departments conferred with one another through their respective representatives of higher and lower instruction. The questions predominating in the daily programme of the pedagogical discussions were those relating to the training of teachers; to promotions from the high school to the universities; to the importance of the classical languages; to coeducation in colleges and in the universities proper. In the schools which correspond to our people's schools and in the higher grades of common schools (*allmänna läroverk*) coeducation is definitely settled and not further discussed. Moral education of the young and, finally, the best mode of bringing the law on obligatory attendance into full effect were also discussed.

The division of the World's Fair devoted to instruction and education was principally placed in the Manufactures and Liberal Arts Building. In this immense building the larger part of the gallery was assigned to educational exhibits. Some of the American States, like Illinois and Washington, had noteworthy educational exhibits in their own State buildings; and in the Woman's Building education and instruction occupied a prominent place.

Several European countries had material of exceptional value. Even far-distant Japan and Brazil made themselves felt in the field of education. In the department of Brazil my attention was attracted by a very fair collection of work from manual training schools, according to the methods employed at Nääs. The exhibits of France, Russia, Germany, and the United States, however, were the most noteworthy. Germany had a very complete and well-arranged exhibit of its school system, from the people's schools to the university. Here one saw an abundance of material for instruction in natural sciences, geography, and history; collections of educational programmes and text-books, pupils' work in manual training, etc. Elaborate accounts of the German educational system, which had been prepared for the Chicago Exposition, were distributed in print.

<sup>1</sup> Reprint from *Verdandi*, 1894.



The United States exhibits were also very imposing. Nearly every State had a spacious section in which were found neatly arranged specimens of pupils' work in all the various educational branches, with an abundance of reading matter, of feminine handiwork, manual training work in wood and metal, from the lowest to the highest stage of instruction. As a distinctive feature we mention that several schools (those of Omaha, Nebr.) reproduced their school songs by means of phonographs. Even the universities were represented by scientific work furnished by their teachers and post-graduate students; also by accounts of their work and by photographs of their buildings, study halls, collections, etc.

The States further distinguished themselves by their very excellent literature, mostly prepared for the occasion in the form of annual reports. These publications contained numerous engravings of the study halls, the appliances and material for instruction, etc. They also included reports of school inspectors, which reports often extended into pedagogical dissertations. The plan laid out for my journey included the study of the methods of instruction in American schools. Unfortunately I arrived too late for this purpose. In Boston and in Harvard University, however, I had a chance of attending some closing exercises. To judge by a few of my observations, I think that America has developed methods that well deserve a closer examination. An extended and thorough study would be very instructive, especially in regard to instruction in the mother tongue, also in geography, history, and political science, citizenship being connected with this as well as ethics.

It is natural that the schools of so many States should differ greatly in respect to quality and organization. However, the general trend of their development shows that they approach the system of the Northeastern States more and more. Here schools of dissimilar standing and organization have sprung up, which at the present time form a more or less complete system. As an example I cite the school system of Boston. We find there kindergartens, primary and grammar schools for children up to 14 years of age, and high schools with four classes for the ages from 14 to 18 years. Next above these are colleges and universities.

I wish first to call attention to the gradual extension of kindergarten work all over America. The sessions of the congresses devoted to the kindergarten system were attended by large audiences, and the work furnished by the little ones occupied a prominent place in the exhibits of the separate States. Daily lessons were given at different places in kindergartens in operation within the World's Fair grounds, and these attracted the greatest interest from both children and adults. I have observed the same facts in England, where the kindergartens are highly appreciated. With us in Sweden a certain prejudice against kindergartens exists. This may be because this method is easily carried to extremes, and a groundless prejudice against "Germanism" prevails. But it is evident that in education there are no leaps; education should commence in infancy, should be well regulated for each age, and, in a well-managed kindergarten, training for the little ones should be obtained. How many parents understand how to carry on this training, even if they are willing and can devote their time to it? And how much could be done at an early age for the purpose of developing the talents of a child?

"Take the child into the kindergarten and there begin the work of physical, mental, and moral training. Put the child in possession of his powers; develop his faculties; unfold his moral nature; cultivate mechanical skill in the use of his hands; give him a sense of symmetry and harmony; a quick judgment of numbers, measure, and size; stimulate his inventive faculties; make him familiar with the customs and usages of well-ordered lives; teach him to be kind, courteous, helpful, and unselfish; inspire him to love whatsoever things are true and pure and right and kind and noble." Supt. J. L. Pickard, from whose book, *School Supervision*, I have taken these citations, says: "The importance of this preliminary work can not be overestimated, nor should the State depend upon private contributions for so necessary a work." In New York and Boston the kindergartens are incorpor-

ated in the public school system, and this will soon be the case in most of the States. There are numerous private kindergartens in operation everywhere.

Before I report my observations relating to the instruction in other grades I will call attention to the inferences under which it is conducted. The schools I visited in Boston, for example, made a very pleasing impression by their airy and light architecture. This impression was not lessened after having inspected the interior of the buildings. Statues and mural tablets decorated the corridors, stairways, and study halls. When visiting an American schoolroom, decorated with mural tablets, photographs, large charts, wall pictures, and bookcases, I found myself desiring to become a student. According to my idea, these pleasant surroundings must produce a very beneficial influence upon the schoolboy. It may be said that he becomes so used to these pictures, etc., that they no longer attract his attention. But why then do we decorate our homes and endeavor to give them a cozy appearance? The artistic impression produced upon the mind and soul of the children at school and at home by these externals is by no means insignificant.

One excellent feature in the American mode of instruction seems to be the endeavor to make it as illustrative as possible. The blackboard is much used, and in the schools I visited in Boston the walls were supplied with blackboards all the way around the room. I have frequently observed the same feature in England (also in the new elementary schools of Stockholm). But the work of the school children at the Fair showed that the pupils are taught and encouraged to reproduce their ideas at an early age by means of drawings. This is especially noticeable in the teaching of natural history and geography, and in teaching history and the mother tongue. I have seen maps drawn and colored by pupils of all ages, from the first attempt of children 8 to 10 years old to the artistically finished production furnished by the higher classes. It was a delight to see the charts prepared by pupils of the Cook County Normal School. Many of these maps, made by pupils of the lowest grades, doubtless gave great pleasure to those who prepared them. Grain, spices, pieces of iron, charcoal, cotton balls, etc., had been used to indicate the various products of the States or Territories. This kind of work is supposed to inspire the child with special interest and to awaken his self-activity. In addition to physical and geographical charts, there were others indicating the products of the different countries; also maps and globes with light outlines to be filled out and completed with chalk. Excellent stereoscopic pictures were also exhibited. The text-books are good and instructive, especially those in geography, with their excellent pictures and maps. My attention was called to a kind of historical chart (Linton's Historical Chart). Instead of the usually dry and dreary aspect of chronological wall tablets, these seem to invite the pupils to make investigations and inquiries, and are of great help in memorizing. The history of the world was represented by pictures in chronological order upon large wall tablets. To illustrate the middle of the eighteenth century, for example, Clive in India, Franklin with a lightning rod, the journey of the youthful Washington to the French forts in North America, etc., were represented. One can well imagine how the interest and attention is increased in a class where such resources of instruction are drawn upon. It hardly need to be mentioned that exceedingly fine charts and pictures of all kinds for instruction in history, geography, and natural history were exhibited in the German section.

Another feature to be pointed out is the diligent application of pen and paper at the examinations in all school studies. To be able to express one's self correctly, both orally and in writing, is considered to be a very important feature. Each pupil is led in this manner to think out the problem to be treated, and his answer will be more accurate than if left entirely to the method of oral instruction. Written answers are required, not only at the examinations and for promotions, but time periods are set apart for this exercise even during ordinary lessons. In this manner the lesson does not remain one incessant examination or recitation. The written



answers give more accurate knowledge of the conception of the teacher's oral communications and at the same time require pupils to furnish independent and individual work. Complaints are made that the teacher's work is greatly increased by the necessity of correcting all these written lessons. As answer to this it is stated that the teacher does not correct the work of each pupil, but certain answers are selected and discussed before the whole class. No stress seems to be laid upon the correction of each separate mistake in the written exercises. Each copy book is not required to be treated like a proof sheet ready for the printer. The exercises are the means by which the pupil develops his faculty of self-activity, the means to find out the standpoint of the pupil and of the class, a mirror, as it were, in which the teacher sees the shortcomings or merits of his own work reflected.

It is quite natural that these exercises should have a favorable influence on the versatility of the pupil in using the mother tongue. This brings me to the subject of instruction in the mother tongue in American schools. From the conversations I had with teachers, from the text-books I read, and from the written exercises of the pupils, I learn that Americans are wide-awake in realizing the immeasurable importance of education in this line. I observe that children, even in the lowest class, are given short compositions, so that they may make instant use of the little they have learned. It is, indeed, a great science to conduct instruction in this manner. Yet this science they try to develop in America. Some simple opinions are formed at an early age; short descriptions of a few lines on daily topics are made, and later these topics are discussed before the class. A letter is dictated, and the child itself writes the answer to it. An advertisement is read and the pupils answer it; or are told to write an advertisement; for example, to recover what they pretend to have lost. A picture is shown and the pupils state their view of the subject represented by the picture; or, if more advanced, they prepare an argument of what may have happened before or after the period of the scene given. In the copy books of the older pupils I noticed a secretary's book of minutes of a board meeting, etc. The questions of the day are diligently discussed. "The bad streets of Baltimore," "Compulsory education," "The Hawaiian question," "Should the World's Fair be opened on Sunday," were some of the topics treated in the composition books of the highest classes. I am not able at present to go into further details of this question, but will add that a study of American text-books in regard to the native tongue would certainly offer many suggestions to our teachers. \* \* \*

The number of lessons devoted to the mother tongue differs considerably, but as a rule it seems that a great many hours are devoted to this branch, even in the higher grades. In the Boston high school, for example, the English language is studied during the larger part of the year four hours a week in the two lower classes, and three hours in the two higher classes (third and fourth year). It must be observed that in the fourth class, which has very few regular studies, English literature takes an important place among the optional studies, and thus language receives two hours more during the week. It is very evident that the reading of literature is encouraged. In the schools I visited each class had a separate bookcase, a handsome ornament in the study hall. The book collection, consisting of selected literature and adapted to the age of the class, is in care of the class teacher. Reference books for the use of teachers are also found there. The subjects treated in the compositions bear witness that the books are really read. "What I have learned from Ruskin," "A half hour with Wordsworth," and similar topics, seemed to have been handled by preference. The pupils also acquired great versatility in oral rendition. It was a pleasure to listen to the young girls and boys at the examinations in Boston, which, as I mentioned before, I had an opportunity of attending. We have frequently heard of the independent manners of Englishmen and Americans in public life, and I had fair opportunities of observing this fact. No matter if the subject discussed referred to "The refraction of light," or "The structure of the dactylic hexameter verse," or "The character of Æneas as exhibited in the first six



books of the *Æneid*," or a "Secretary's report of an English recitation," one was always agreeably attracted by the free and easy manner with which the subject was discussed, the speaker being aided by only a few notes. This universal faculty of unaffected and correct expression I observed frequently at the congresses in Chicago.

Speaking of instruction in the mother tongue recalls some observations made while studying the German compositions of graduating students (*Abiturienten*) as seen in the German exhibit at Chicago. In our country, says Dr. Österberg, I have frequently heard pupils, parents, and teachers express their uneasiness when the graduating compositions had to be written. This uneasiness does not originate from a doubt of the pupil's ability to use the mother tongue correctly or to arrange the compositions logically, but from fear that the subject may be of such a nature that the pupil is not sufficiently familiar with it. To be sure, these topics are selected from the material which the pupil has gone over during his school years, yet a long time may have elapsed since he heard or read anything relating to the subject, and it may happen that these very points were never treated thoroughly enough to give him any essential facts to write about. It is not easy to write when material is wanting, hence these compositions often display loose and unsatisfactory arguments and are wanting in style. In Germany the teacher reads off three subjects, which he knows the pupils to have mastered, and then a higher authority determines the subject to be given (another topic may be selected, if necessary). In the proceedings of the "*Abiturienten*" examinations in Breslau, for example, the teacher announces that Goethe's "*Iphigenia*" has been read, and proposes the following themes: "What ideas do the prayers of *Iphigenia*, addressed to the Gods, convey of her character?" "A noble man is greatly influenced by a woman's good word. How is this proved by *Thoas*?" "In what manner does *Pylades* show himself a special friend in the hour of distress?" The first of these was chosen. The compositions indicated thoroughness and ease of treatment, which might be expected from thorough knowledge of the subject. In England and America the pupil sometimes knows, several years in advance, on what authors and works or on what period in history the questions will touch. \* \* \*

These requirements prove that studies in the native literature are promoted. I have observed that, as a rule, the educated classes in England and America have a more thorough knowledge of their own country's authors and their work than we find in Sweden in the same circles. Undoubtedly the interest with which libraries and the science of collecting books and arranging libraries are fostered in America may be one cause of this. Public libraries, and reading rooms connected with them, are considered almost indispensable in every advanced American community. It is not so well known that several schools have been founded and that departments in colleges have been established to disseminate a knowledge of library work and to give pupils an idea of the practical side of library questions. These schools have organized the exchange of books and made them accessible to the public in a most practical manner. \* \* \*

But more is needed than the mere establishment of libraries; one should also stimulate a desire for reading and a taste for the pure enjoyment found in consulting good books, and I have reason to think that this will be brought about by school instruction. The possibility of calling forth a love for reading and the literature of the fatherland exists already in the fact that the mother tongue occupies so important a place on the school programme and in the methods employed. It must be remembered that the programme includes a small number of studies, and that the school does not take up all the time of the pupils. The first section of the Boston high-school regulations reads: "The school hours shall be five each day, five days a week." Of these, four hours for recitation and for study are set apart for the pupil's individual work. Twelve hours a week are assigned for home work. Under such conditions the pupil has leisure to take interest in a more thorough study of the master works of the literature of his native country.

A question that greatly occupies the pedagogical world of the United States is that of the training of teachers. In a country where such numerous changes take place among teachers, and where new schools are constantly erected in large numbers, this must be a very difficult problem. But the difficulties stand out clearly before their eyes, and they struggle with all their might to conquer them. Some of the teachers are trained in the so-called normal schools; but these can not supply the schools with the requisite number of new teachers. Most of the normal schools seem to rank with the high schools, but the instruction is given with special consideration for the student's future occupation as a teacher, and courses in pedagogy are given also. In this manner, however, only kindergarten, primary, and grammar school teachers can be obtained. Teachers of the high school, who usually pass through a college course, or take a degree at a university, rarely have a pedagogical training. To accomplish this, however, is the desire of America and England, where at this moment lively discussions are carried on in regard to "secondary education" and the training of teachers for secondary schools. This discussion was brought about by a bill that had previously been considered in Congress. In the meantime, and this I wish to bring chiefly before the public, the study of method in education and instruction is encouraged in every part of the United States, and pedagogy is by no means disdained. Some of the normal schools seem to have raised their standard far above others, and comprise among their students persons who have even passed a university examination. The State Normal School of Michigan, for example, grants degrees in pedagogy. The degrees of bachelor of pedagogy and master of pedagogy are granted to students who, after a complete course at a normal school, or examination for admission to a university, devote one or two years more to pedagogical studies and write a treatise on that subject. Several universities have separate chairs for pedagogy. \* \* \* That the teachers of America were well versed in the theory of pedagogy and history could be observed at the deliberations of the international congress. An English woman, a teacher, who during the summer took part in the congresses, mentions an utterance made by an American teacher in one of the section meetings: "We all acknowledge a certain philosophical system underlying all education. How many English teachers," she added, "are familiar with philosophy of teaching?" And we Swedes may well have reason to ask the same question.

The difficulty of obtaining efficient and well-trained teachers has brought about the natural result that school supervision plays an important rôle in the United States, especially the so-called State supervision, which is carried on by one inspector in each State for all schools. School superintendents like Horace Mann, Henry Barnard, and William T. Harris have had unprecedented influence on the development of the American school system. Since the years 1830 and 1840 they have, as it appears, been indefatigable in promoting the interests of education in their own and other States, and by advice given to individual teachers, through teachers' meetings and lecture courses, and through their valuable and extensive official reports, they have exerted influence upon lawmaking bodies, boards, and councils.

One institution which originated in this manner is the so-called teachers' institute. \* \* \*

In connection with these there are reading circles in which certain books are studied by each teacher in the course of the year and then later are discussed at stated meetings. Summer schools are also held at the normal schools previously mentioned. \* \* \* Even Harvard College has a summer school for teachers. These institutes also include the courses given at Chautauqua, which are connected with reading circles during the remainder of the year. The Chautauqua system has given rise to a number of similar institutions all over the Union. As another example of how opportunities are offered to teachers to avail themselves of the experience of renowned colleagues, I refer to a paragraph of the school statutes in Cleveland, according to which opportunities are offered each teacher to visit other schools on certain days.



Especially numerous are the pedagogical societies and teachers' associations. These frequently issue publications of their transactions. There are a great many pedagogical journals in America and some of them rank very high. The National Educational Association, whose proceedings are of great importance, and under whose auspices the international congress was held last summer in Chicago, issues annually a volume containing a full account of its proceedings. These large volumes are a veritable mine of instruction, and offer pedagogical reading matter of no mean character. Among American educational writings, the reports of Messrs. Mann, Barnard, and Harris, previously mentioned, most assuredly take the lead, as do the journals edited by these eminent educators. The valuable publications issued by the United States Commissioner of Education should be included.

To judge from the interest displayed in pedagogy by American teachers, by the highest officials of schools and universities, as well as from the importance the public bestows upon school education, and the sacrifices made in its behalf, one must expect fair progress in future within the province of education. My opinion is that a thorough investigation of the United States school system and a profound study of the schools in operation would bring to light various instructive details worthy of imitation.

### STUDIES ON THE EDUCATIONAL EXHIBITS AT CHICAGO.

From a report by Dr. N. G. W. LAGERSTEDT, of Stockholm, Sweden.

[Mr. Lagerstedt was commissioned by the Swedish government to visit the Exposition, and was required to make a report to the department of worship and education. He left Stockholm in June, 1893, and after visiting the United States Bureau of Education proceeded to Chicago, where he remained until the middle of August. He gave particular attention to the educational exhibits, took part in the educational congresses, and visited some of the educational institutions in Illinois and Minnesota.

In his opinion, the German exhibits were the most important after the American, but other exhibits are mentioned. After a short notice the author passes on to a more detailed and minute account of American schools. He begins with a brief review of the public school system of the United States, and notes the effect of independent management by the various States, but points out the fact that there are still certain leading features common to all schools. These features are then discussed, and the schools of Columbus, Ohio, and Tacoma, Wash., taken as characteristic of certain types. He finds that the public school system of the United States corresponds to the secondary schools of Sweden, but is inferior to them.

Normal schools are then considered, as is the preparation of teachers and their characteristic weakness in America. After a few sections devoted to the United States Bureau of Education, the powers and functions of State boards of education and city school boards are considered. The next few pages are devoted to American universities and colleges, to the higher education of women, and to expenditures for education. After this general introduction he begins his study of educational questions as follows:]

\* \* \* The largest proportion of the United States school exhibit consisted of pupils' work. This is probably due to the fact that the school children of the United States, more than with us, devote their time to work that leaves visible results—to productive work. The latter includes short compositions in the mother tongue, besides penmanship, written exercises in spelling, arithmetic, drawing, painting, manual work, modeling in clay, natural-history collections and other work, map drawing, relief maps, kindergarten work, etc.

The exercises in the mother tongue seem to me especially noteworthy. These begin, in Columbus, Ohio, during the latter part of the first year of the primary school (pupils of 6 years). The children, for example, fill blanks in sentences, using words from a given list. During the second year the pupils express their ideas, first verbally, then in writing, on some object or action observed. They describe simple pictures, and toward the end of the year write short letters or repeat in writing subjects that were discussed during lesson hours. In the third year (at first daily) written opinions and short compositions on general topics within the comprehension of the pupils are required; then further descriptions of animals and plants, and of actions, letters of greater length, or narrations with certain words interwoven. The



regulations for the fourth year prescribe the reproduction of short stories from American history, read by the teacher; also, descriptions of animals, plants, scenes, etc., narratives of journeys, accounts of picnics, etc., and letter writing. At times the pupil may choose his own subject and relate things that interest him. For the fifth year, or the first of the grammar school (pupil's age, 10 years), there are prescribed, among other things, descriptions of current events, or of more extended trips made by the pupil, and compositions on subjects taken from natural history, physiology, the science of hygiene, or other branches taught in the school, or on general topics of interest in city and country. The compositions are furnished in rough copy, and after correction are rewritten. This year's work includes stories from outlines, writing from memory, and original work. During the two following years, the sixth and seventh, nothing new seems to be added in this line. During the seventh year a written exercise is required once a week. For the eighth year, short letters, business accounts, short historical and biographical sketches, in accordance with given outlines. No separate courses for written work are prescribed for the several classes of the high school.

The foregoing courses show that these written exercises are introduced much earlier than with us. As they are continued throughout the whole school course, parallel with oral exercises of a similar nature, it is very evident whence proceeds the remarkable skill of American school children in writing and speaking their mother tongue.

Furthermore, attention must be called to the practical character of the written exercises. Letter writing occupies a prominent place, and careful attention is paid to the common rules of heading, closing sentences, and signature, folding of letters, and addressing. Special training is observed in drawing up business letters and similar composition work. For purposes of a more practical character we may also mention such as describing current events, for example, public festivals, etc.

One kind of exercise often resorted to is certainly very appropriate; it consists in describing a picture. Such exercises are commenced at a very early stage. The pupil is given a small colored picture, which is pasted on paper, and then he states what it represents. The following may serve as an example;<sup>1</sup> it was written by a little girl 8 years of age:

"Mary and her lamb. There are a little girl and a lamb in the picture. The lamb is jumping through a hoop. There is a boy by the well. There are two trees; I can just see their leaves. There is a seat between the trees. There is a boy leaning against an old-fashioned well. There is a bucket by the well. There is a rolling stick on the ground. There is an old country fence. There is a house behind the fence. I can just see the top of the house. There is a rock near the little girl's foot. I think it is summer, because the little girl has short sleeves. The little girl is laughing at the lamb."

Writing of this kind was also presented in the French educational exhibit at the Chicago Exposition. Among written exercises of pupils many could be found that were connected with drawing exercises. A plant, or a part of a plant, an animal and certain parts of the same, a physical apparatus, etc., were drawn, frequently even colored, and described. Some examples derived from a high school in Pittsburg may be mentioned. A paper with the heading "Study of a crab" represented this animal, with illustrations of separate parts and descriptions. A sparrow was pictured and described in the same manner. Another exercise, "The growth of maize," consisted of illustrations, mostly colored, and representing maize in different stages of development from the growing seed to a full-grown plant. In another composition a fruit-bearing branch of a cherry tree was seen, illustrated and described. Another showed a colored india-rubber leaf of natural size, with description which read as follows: "This is the leaf of an india-rubber plant; the princi-

<sup>1</sup>Not being personally in possession of a copy, I have taken this from Buisson, *Rapport sur l'Instruction primaire à l'Exposition universelle à Philadelphie*.

pal parts are the blade and petiole; the margin is entire. The shape is elliptical, the apex is acute, the base obtuse, the surface is smooth, the veins are paralleled costal, and the texture leathery."

Sometimes, instead of a drawing, a pressed specimen of the plant treated was fastened on the paper. In this connection I mention that at examinations the answers to the questions are mostly given in writing. To what an extent this is done in different cities and places I am not able to say. This method of examination has no doubt advantages which are worth considering. The similarity of questions addressed to all pupils will cause more correct answers; the questions are considered more carefully; the answer is given with greater composure and caution; and the result of the examination depends less on mere chance. This method is also carried on in England to a large extent, from the lowest classes of the school to the university and governmental examinations. My opinion is that this method of examining deserves to be introduced in our schools to a certain extent. It certainly would be practical in the higher classes of our secondary schools in connection with oral exercises in mathematics. The experiments which I made when an inspector at the normal school for higher grade women teachers brought out the good features of this method. First and foremost, it is of great advantage in grading the certificates that there should exist a written evidence of the student's efficiency. In most instances it happened that the examination agreed with my previously formed judgment in regard to the student's ability. Sometimes, indeed, a student, through the accuracy and keenness of her answers, showed herself worthy of a better rating than I had hitherto awarded her. Yet I do not remember any case in which a favorable judgment of mine, previously arrived at, was ever set at naught after inspection of the written answers. At times, of course, I became assured on one point or another where I hitherto had been undecided in forming a final judgment. However, to permit the results of written answers to solely influence the certificates or opinions at an examination would be entirely out of place. Oral examinations give the examiner an opportunity to see the examinee in a different light from that in a written examination. It seems best, therefore, to have both kinds, if possible. For that purpose one might submit questions for written answers different from those used in the oral examination. For one pupil it may be easier to express himself orally, while another pupil is more able to state his ideas in writing. It is no more than just that each should be afforded an opportunity to show his ability in the best light. It is preferable to make an examination as many sided as possible. With this end, one might propose questions differing in nature, so as to bring out the individuality of the student in his written answers. Besides, some of the questions may require only a brief statement of facts, others a more detailed answer; the latter, however, without leading to a composition, which is a question that can not be considered here.

In regard to instruction in drawing and coloring, the schools of the United States present some features that are of great interest to us and very instructive. A closer study of this branch would be most profitable to a professional teacher. I will present only those sides which attracted my attention most. I have already mentioned that a drawing lesson is usually combined with a written composition; the pupil must at the same time draw, perhaps color, and describe a subject. This subject is generally taken from the study of natural science; for example, a plant, or an animal, or a piece of physical apparatus, etc. The teacher tries in this manner to connect the instruction of drawing and painting with other school branches. Some work sent by the pupils of Grand Rapids, Mich., in colored pictures of leaves or other parts of plants, bore the inscription: "Our aim is to aid the instruction in botany by instruction in drawing." Instruction in the natural sciences is of course best adapted for combination with that of drawing. In schools where efforts are made to combine these branches the pupils of the lowest grades (from 6 to 7 years of age) begin with these drawing and coloring exercises. The children are supplied with paper, color



box, pencil, etc., and a flower, and then without further preparation they are told to paint it. The picture which the child produces is naturally very primitive, but then all first results are crude, no matter at what kind of handiwork we make our first trial; in fact, the production of something defective and incomplete is a means of practice and instruction that will effect better results in future. The child's skill in coloring soon improves and surpasses the expectations of everybody. In the Indianapolis schools,<sup>1</sup> and probably in various other places, the children are kept occupied with so-called "silent exercises" in coloring. To the picture they add in writing their own thoughts or ideas on the subject represented. Instead of writing they express them at times by fastening on the paper a number of loose letters, arranged into a sentence. For example, one child wrote under the picture of a buttercup: "Come again buttercup, where didst thou grow little flower?" Another child, representing the leaf of an apple tree, wrote: "This is the leaf of an apple tree. This leaf does not resemble a geranium leaf, it has the form of an egg." It is easily understood that exercises of this kind tend much more to educate and are more apt to widen the perceptive powers, as well as to amuse a child, than if it were forced to write over and over again the same words or short sentences.<sup>2</sup> To give an example of the combining method of drawing and coloring with other branches of study, it may be mentioned that the pupil, naturally at a more advanced stage than that just referred to, has to color maps or characteristic landscape pictures; and that they make drawings of historical events, as the engagement between the *Monitor* and *Merrimac*.

Besides this kind of drawing and painting, however, there should be carried on, at all times, a more methodical study of drawing. In this respect the pupil is to a large extent kept busy inventing new designs and composing decorative forms, at first under the guidance of a teacher and according to certain geometrical motives or forms conventionalized from nature. As examples of such forms from nature, I saw used oak leaves and acorns, the leaf and flower of a wild rose, leaf of a vine branch, blossom and buds of a lilac, an ilex leaf. Some specimens of this kind displayed much taste and inventive talent and were well executed.

All this refers to the mode of teaching in the practice department of Cook County Normal School, Chicago. This practical study occupies quite a conspicuous place on the programme of the normal school.

Drawing on a blackboard is used extensively with the general lessons, and the teacher must possess greater skill in drawing than is usually the case with us. In a school at Moline, Ill., near Rock Island, I saw drawings on the blackboard that were executed with chalk by one of the teachers and had remained on the board from the preceding term. I can only say that they were surprisingly well done and indicated a high degree of artistic execution.

Modeling in clay is a branch that has been introduced in more recent years and has been adopted in a great many schools. In the kindergarten children are set to work with it. They first draw and then model some geometrical figures, as a cube, globe, pyramid, cylinder, cone, etc., or some other easy figures, as a mug, vase, etc. In the Boston schools, where it was first introduced, this subject is taught on a different plan. A few hours' instruction of modeling in clay was every day (except on Saturdays) given to children during the Exposition in one of the rooms of the Children's Building. The instruction was carried on in conformity with the Boston plan. Guided by things I saw and heard, and by a printed paper distributed among visitors and explaining methods, I will attempt to give a few particulars on the subject in question. The aim of this plan is an educational one; endeavors are made to train the child's capacity for comprehending and reproducing forms, or, in other words, to train his eye and hand. The models are after drawings that have been made previously from other models or oral descriptions. The child first forms

<sup>1</sup>J. M. Rice, *The Public School System of the United States*, New York, 1893, p. 106.

<sup>2</sup>*Ibid.*, pp. 126, 127.



a square disk of clay (about 6 inches edge and one-half inch thickness). Upon this raised figures are then formed by means of new layers of clay. The contours are first traced on the disk and must conform with the drawing on the paper that serves as a model for the work. All patterns for the figures are based upon geometric forms. The pupil is sometimes required to personally produce the designs from which he models. Pupils from 7 to 12 years old execute in this manner really difficult tasks upon the square disks mentioned. Older pupils model separate leaves and fruit forms, later animal studies, and finally, parts of the human body. In doing this only the distances from the principal points are measured, and the contours are drawn by eye measure. Thus the work is commenced, to the execution of which, first and foremost, accuracy is requisite, and the models are of such a nature that the parts can be easily measured by the pupil and later corrected by him from measurements. After the eye has been trained to judge and the hand to reproduce such forms correctly, some smaller mechanical designs are attempted that make a transition to more purely artistic work.

That the collecting of natural science objects and other things belongs to the regular school work of pupils, at least in some places, was shown by the exhibits. There were, for example, in the New York State division, herbariums and other collections furnished by pupils; collections of wood specimens, rocks, fossils, specimens of stone and flints. From a high school in Kansas City, Mo., there was a collection of about 300 insects, mostly large butterflies, with notes attached saying that nearly all these specimens had been prepared in a room specially devoted to natural science. From a normal school for women in Wisconsin physical apparatus was exhibited that had been constructed by the students after a pattern which they had themselves invented.

To judge by the exhibits, the making of geographical relief maps is an ordinary occurrence. The raised parts are formed by means of putty or a kind of pulp of boiled paper. The base consists of a wooden plate, sometimes only of cardboard.

I wish to lay stress upon the fact that the branches taught in the United States schools are designed to awaken productive activity. This aim is not subordinate to the regular lessons, but constitutes in fact the principal part, at least much more than with us. Productive work is in our country included in the school programme also, to wit, writing, drawing, arithmetic, etc., but the larger amount of our school work consists in lessons being read over by the pupils and later recited at school. Besides this, our teachers endeavor to inculcate the pupils with ideas; they convince themselves that the pupils have a true understanding and retention of these by their answers to queries in recitations. Our pupils' work, therefore, is preeminently of a receptive kind. It is evident that the instruction given in the United States schools exacts a many-sided self-activity on the part of the pupil, by way of occupying him to such a great extent with work which requires productive activity. To study lessons and to comprehend and recite the information gained calls forth naturally a certain amount of self-activity, but only a one-sided self-activity. It is indeed one of the most important problems of good instruction to tax, in a proper manner, the pupil's self-activity, and this it seems to me is done by the work referred to. This work is also apt to keep the pupil's interest awake, a fact which can be easily understood. It is also evident that the knowledge acquired in such occupations will be better retained by the memory and applied in life. To adopt various kinds of such work in our schools would be most decidedly of advantage. This change could not be introduced without a corresponding curtailing of courses and lessons, but this loss probably would be more than counterbalanced by the advantages gained.

The practical character of the school work in the United States is plain. The aim is to place it, as far as possible, in connection with actual life, during and after school. That this, however, by no means need imply an overlooking of the school's aim to act in the service of education is well understood from the above statement.

Finally, I shall dwell upon the movement and efforts of more recent date throughout

the United States in relation to "raising the standard of the teachers' professional training," and in relation to the progress of the science of pedagogy. The establishment of chairs of pedagogy at the universities is included in the above scheme. The first chair of this kind in the United States was established in 1879 at the State University of Michigan, in Ann Arbor. There is also a chair of pedagogy in Clark University, where Dr. G. Stanley Hall performs the functions of a professor of psychology and pedagogy; another in Leland Stanford Junior University, besides one in the State University of Minnesota, at Minneapolis. The last-named chair was established in 1893.

The "school of pedagogy," founded in the University of New York City in 1890, is certainly quite unique in its nature. This faculty holds the same position in the university as the faculties of law, medicine, and philosophy. The faculty of pedagogy (it is thus designated on a pamphlet sent to me from there) is founded upon the principle that the special training for a teacher's career should be placed on the same level with the training required for other professions. The corps of teachers consists of 5 members, a dean, 3 professors, and a lecturer. The faculty grants two degrees, the lower, "Master of pedagogy" and the higher, "Doctor of pedagogy." To secure the latter it is requisite that the candidate be in possession of a certificate and have had at least four years' successful experience as a teacher; to have pursued for at least two years the studies of the higher section of the faculty, and to pass a good examination in the following five subjects: (1) History of education and instruction; (2) psychology and ethics; (3) pedagogy and methods, including school hygiene, etc.; (4) literature of pedagogy and esthetics; (5) the educational systems of different countries, besides the writing of a scientific dissertation on pedagogy which displays an independent treatment of the subject and bears witness to original research. The first graduates of the faculty of pedagogy obtained their degree as doctors of pedagogy and masters of pedagogy in 1891; in all, 26. Among the doctors of pedagogy who have graduated hitherto there are 5 women. During the school year 1892-93 the faculty counted about 135 students. The persons who pursue these studies are principally those who wish to educate themselves to become school inspectors, superintendents, professors at normal schools, etc.

A recent pedagogical movement, of which Dr. G. Stanley Hall is the originator and leader, attracts much attention. Its aim is to make the child, in the interests of education, an object of empirical study and to base education and instruction more than heretofore upon a true knowledge of the child's physical and psychical nature. Dr. Hall's journal, *The Pedagogical Seminary*, may be regarded as the organ of this movement. Two volumes have thus far been published. With reference to articles in that journal, and to an article by Dr. Hall in *The Forum* in 1893, a few remarks will be added here to point out the work which has been accomplished and the aims and endeavors connected with it.

It should be understood, however, that efforts in this line are not confined to America alone. The leading incentive of the movement may lie in the fact that Dr. Hall is both a practical educator and a psychologist, and as such a follower of the modern tendency, which, being based on psychology and the method of the exact sciences, endeavors to investigate the activity of the soul. This movement originated in Europe, and has there its representatives in Wundt, Fechner, Helmholtz, etc. Valuable works on empirical child psychology have been published in France by Compayré and Perez; in Germany by Preyer. Examinations of a large number of children in regard to their physical condition and for other purposes have been made repeatedly in Europe. Among others, I call attention to the investigations made in 1884, ordered by the Swedish school council, and which became known and famous through the book edited by Prof. Axel Key. Questions of this kind have at present been taken hold of with great zeal by the followers of the American leaders in this question. They endeavor to accomplish cooperation among persons who study the child from various standpoints—teachers, parents, physicians, psycholo-



gists. Their principal endeavor is to gain safe ground for a better education and instruction.

Whatever has been done, though, to advance this study can not be compared with what may yet be done. "The future of the movement," Dr. Hall says, "depends essentially on never-ceasing, laborious work."

The study of a child is very far-reaching, according to Dr. Hall's theory. He divides it into four parts, each comprising one of four stages of development: (1) Prenatal age; (2) the period from birth to the age of 3 or 4 years; (3) from then until 13 or 14 years; (4) from the last-named age to 20 or 24 years. Children belonging to the third stage, or that comprising the larger portion of the school period, have hitherto been the principal object of study and research.

The usual mode of research consists in examining a large number of children, say several thousand, on one and the same point or points. They are measured and weighed, their strength is tested by means of dynamometers; their teeth, eyes, lungs, nose, throat, hearing, their sense of precision and speed in movements, etc., are examined under observance of every precaution to avoid error and to gain a uniformly accurate result. If it is a question of investigating what a child knows in certain lines much tact is required and the cross-questioning is done by experienced and competent persons who are fond of children and accustomed to their ways. One kind of examination in vogue consists in letting a child write down his thoughts on some subject. The child, as has been previously stated, obtains much drill in this line, and even in the lowest classes commits his thoughts to paper. The child even attempts to draw pictures and to illustrate short narratives read to him beforehand.

A very simple method of investigation is one that for a number of years has been followed by the students of Worcester Normal School, at the instance of the principal, E. H. Russel. The students are instructed not to make fixed observations without paying the most scrupulous attention to the actions and speech of the child, and to write down the facts obtained in this manner. These written notes are kept and arranged under appropriate headings, as memory, imagination, anger, imitation, etc. At present there are more than 14,000 such notes on file. They touch upon all questions of psychology, and the best of them are used in the instruction of this branch at the normal school instead of a text-book. The following are examples of notes:

(1) "While I examined what the child had been writing Carrie asked my permission to take her slate home and show the writing to her mother. Immediately following, six or seven other children asked permission to do the same."

(2) "Charlie, the child under observation, aged 5 years 8 months. One evening several chickens had been killed, and Charlie was sent to one of the extreme rooms to fetch a chicken that had already been plucked. After a moment's absence we heard him scream as though he were greatly frightened. Somebody ran out to see what had happened to him and found him very pale and leaning against a table; in the open doorway stood a young, live chicken. After a long time of questioning we finally learned the cause of the boy's fright. He thought that the chicken he had come to fetch had come to life again and was the one standing in the open door. Charlie was, as a rule, not afraid of anything."

(3) "E. (5 years), a girl, went out into a rain storm and, without having a hat on, placed herself in the middle of the road. The mother: 'E., come in and do not stand out in the rain.' E.: 'No; I will remain here until I am soaked, so that I may grow and become tall. I do not want to wear dresses any longer; I want a pair of pants.'"

According to common experience, the instances recited are by no means remarkable facts. The future importance of these annotations to educational psychology is by no means settled yet, but without doubt they will be of some service. "This is no science as yet, but without experiments there is no science."<sup>1</sup> The gain derived from these notes is in one respect immediate. They have proved to be of great help

<sup>1</sup> Ribot.



to graduating teachers. They take greater interest in each child, individually, instead of meditating too much on the pedagogical abstraction called the child. This study of the child, as it is expressed by some people, is done "directly for the sake of the teachers, indirectly for the sake of the child, and has the additional purpose to benefit science."

Some separate examinations of a large number of children and their results will be mentioned here. Professor Bowditch has examined weight and height of 24,500 pupils in the Boston schools. He found that until 11 or 12 years of age the boys were taller and heavier than the girls. Later the girls begin to grow more rapidly and within a few years they are taller and heavier than the boys. However, the latter soon catch up and outgrow the girls. Measurements of about 10,000 children in Milwaukee showed that a child grows more rapidly from May to November than during the other part of the year.

By weighing more than 30,000 children it has been ascertained that children who are intellectually developed early are heavier, and lazy children lighter, than other children on an average would be at the same age.

Investigations regarding the eyesight of school children made in Breslau among 10,000 children and worked out by Dr. Cohn show that the nearsightedness increased from grade to grade. Similar investigations by other authorities show the same results. Examinations have been made even regarding the hearing of children, and it was proved that many children who are not thought deaf nevertheless possess a less acute capacity of hearing, and do not, therefore, profit fully by the oral instruction. Such children are considered less talented, while in truth they are deaf to a certain degree. In Berlin it has been found that 25 per cent of the children examined were more or less afflicted with deafness, and in most cases sufficiently so as to impede the progress of their school work.

The examination of a number of school children in St. Petersburg showed that more than 11 per cent suffered with headaches. Among school children in Hamburg there were 32 per cent having more or less defective nervous systems; the percentage increased from grade to grade. A comparison of investigations in this line led to the conclusion that more than 30 per cent of the school children in Europe have defective nervous systems; moreover, that the percentage in the lowest classes was almost zero in this respect, but increased to 66 per cent during the last year in a classical high school. According to statistical information in Prussia, 289 pupils committed suicide within the period of five years, in most instances from causes arising in school.

The question concerning the effects of fatigue has been treated also. A decrease in the accuracy with which school children performed their work in the morning was observed in various grades. The decrease amounted to 33 per cent during the day, after four or five hours of work.

Some investigations regarding a child's intellectual life should also be mentioned. The first one ever attempted was made in Berlin in 1869, with the object of ascertaining what knowledge a child possesses of things in general. The result was that children showed great ignorance of many things thought to be known by every child. Dr. G. Stanley Hall brought about a similar investigation in Boston in 1880. A great many children, about 6 years old, who had just entered school, were interrogated as to their knowledge in various respects. The questions were put by tactful and experienced persons, usually women teachers. I mention the following results: 14 per cent of the children had never observed the stars and did not have the least conception of them; 35 per cent had never been in the country; 20 per cent did not know that the milk comes from cows; 25 per cent that wooden utensils were made of trees; 13 to 15 per cent did not know the name of the colors green, blue, and yellow; from 13 to 18 per cent did not know what their cheek bones, forehead, and throat were. More than three-fourths of all children did not remember to have seen any kind of seeds, trees, or vegetables in growth. The subjects asked

after were mostly such as are treated in the first reader and discussed with the child at the beginning of the common school course. One danger closely connected with this may be easily recognized if those teaching do not sufficiently consider how little they may expect from a child—namely, that much of what a child learns in school remains simply a matter of memory and empty words, instead of becoming real knowledge.

A child's capacity of retaining in the memory numbers of about nine figures has been proved, and also that this capacity increases with age more than other faculties; besides, that it is greater with girls than with boys, and that it necessitates a great amount of talent in continuous and concentrated attention.

Mr. Earl Barnes, professor of pedagogy in Leland Stanford Junior University, made an investigation concerning the religious conceptions of a child. The investigation was based upon 1,091 compositions, which were written without previous preparation by pupils of different ages in the schools of California; and also upon conversations between children and mothers or teachers, as well as upon a few recollections of older children. Among other things it appears that little children have most realistic ideas about God, angels, heaven, etc. God, for example, is a big blue man who pours water out of a big bucket in order to produce rain, and who beats the skies when it thunders. Professor Barnes advances the idea that the teaching of religion to little children has to be done under an anthropomorphic or realistic form. If we really teach them, as it should be done, that God is a spirit, their imagination will nevertheless give Him a human form with human attributes. A child's imaginations are founded largely on pictures which they see. For this reason it is very important that such pictures be good and well done whenever a religious subject is treated, as, for example, Raphael's Sistine Madonna.

Very recently a society has been founded in the United States for the purpose of working in the interests of child study. The society's name is National Association for the Study of Children. Its establishment was determined upon at one of the pedagogical congresses in Chicago last year. The president or chairman of the society is Dr. G. Stanley Hall. The object of the society is "to promote, through the organization and cooperation of its members, the scientific study of children, among teachers living apart in different places of the country, and among parents or other people who pursue scientific child study, so that they may assist each other with advice, suggestions, and study plans, and in order that material which belongs to one or the other special study may come into the hands of persons who are specially interested in working up such matter." One circular distributed by the chairman of the society contains, among others, suggestions for formulating a general plan for child study in its entirety. The headings of this plan are as follows: (A) Physical growth; (1) weighing; (2) measurement; (3) photographs, taking casts, etc. (B) Motor tests; (1) general researches; (2) annotations of particular movements and plays, which children can execute in the lower classes of the school; (3) strength; (4) promptness; (5) accuracy; (6) fatigue; (7) language. (C) Inquiries regarding the senses. (D) Higher intellectual faculties. (E) Emotions and passions. (F) General observations (such as mentioned and directed by E. H. Russell, of the normal school in Worcester. (G) Abnormal and peculiar children. (H) Miscellaneous. In the circular it is advanced that observations such as mentioned under (F) may be considered as introductory to the whole study, and should, so to speak, be practiced as a first stage as often as circumstances permit. These observations are comparatively easy, while the others, on the contrary, require more complicated methods or apparatus. The persons who devote themselves to special researches should apply the strictest attention to the whole plan and make notes of the kind last named (F).

The enlarged knowledge of a child's physical and mental characteristics, which may result from the movement in question, will no doubt also influence the school and everything belonging to it. It is indeed desirable that the whole educational



activity, as far as possible, should be regulated in conformity with the results obtained by means of this research work. On the other hand, the school itself offers the very best opportunity to collect practical experience respecting children, and to apply and try whatever is best for them. Dr. Hall at present entertains the scheme of establishing a school which in every way shall be an ideal school. He intends to place it in Worcester and connect it with Clark University. Efforts will be made to make the buildings exemplary in regard to plan, heating, lighting, ventilation, etc. The grounds will, among other things, show what can be done within a limited space. The writing desks, as well as other school furniture and apparatus, will be of the best kind. Only prominent men and women teachers are to be appointed, who are able to comprehend the best methods and to make practical use of them. The school is to be under the direction of men of university education, well versed in the history of education, in pedagogy, psychology, and hygiene, besides having a personal knowledge of the best schools in other countries. The financial condition of the school should be such that it can in every respect use and furnish whatever is the best, and make necessary changes whenever they are desirable. It is easy to understand that a school with such characteristics will become very useful, and its benefits will probably not be restricted to America. The readiness to make sacrifices for public purposes, and the enthusiasm which distinguishes Americans, leave room to hope that the plan of this school will not remain on paper only, but become a reality.

## GERMANY.

The German educational exhibit was very excellent. Great pains and attention had been bestowed and large expenditures had been made for the purpose. To judge by the several divisions of this exhibit, which I inspected more in detail, it must have been among the best of the whole World's Exposition. Whoever wished to make a thorough study of the German educational system found here ample opportunities, and the material had been selected with such painstaking care that it would be difficult to imagine anything more appropriate for a study of this kind.

The German educational exhibit had its place in the western gallery of the Manufactures and Liberal Arts Building, on the same side of the building that contained the other exhibits of Germany. A portion of the educational exhibits were placed in a smaller gallery above the first named.

The educational exhibit comprised the university system, higher education for boys, secondary schools for girls, people's schools, with normal schools, and schools for abnormals. In this division I paid special attention to the higher schools for boys and girls and the people's schools. However, I have not found it convenient to give an account of their details. The printed catalogue and guides which were distributed furnish all the information that can be desired. Nevertheless, I will here touch upon a few general features, and on such other items as appear to me of interest.

The largest part of the German school exhibit consisted of apparatus and material of various kinds, text-books, wall maps, charts, models, instruments for the study of physics, etc. One may say that the German exhibit showed, above all, what is done for the pupils, while the United States exhibit contained that which is done by the pupils.

An important part of the exhibit consisted of collections of various kinds of literature; works treating of schools and educational systems; text-books for different branches of study, and a library for school children. There was exhibited a collection of eminent German pedagogical works, partly of more general character, partly treating of the history of education in all Germany or in separate provinces or cities, biographies of prominent educators, etc. Then there were books containing rules and regulations which at the present time are in force for the different kinds of schools, educational journals and annuals, all the proceedings of the directors' conferences and the famous December conferences in Berlin, etc. Several publications



relating to the German educational system were specially written for the exhibition, and these, with several other works, were accessible in duplicate copies to interested visitors. Furthermore, there were collections of annual programmes from various kinds of institutions, among these a number of programmes for secondary schools for boys in Germany in 1892, besides a complete series of annual programmes from 1839 to 1892 from the gymnasium in Frankfort-on-the-Main. For the different branches of instruction there were collections of the best and most commonly used text-books, or such as indicated certain new tendencies, besides works touching upon the methods of teaching various subjects. A complete collection of German readers for the people's schools was of great interest. The collection comprised 225 volumes and contained all the readers of this class up to date, beginning with F. E. von Rochow's *Der Kinderfreund*, published for the first time in 1776, the first German reader for people's schools ever written. A division of the pupils' library, designated the "Normal library for girls' secondary schools," contained 420 volumes; another, from a people's school in Berlin, had 256 volumes, and still another library, for normal school students, contained 560 volumes.

Of the abundant material for instruction, only the most important will be noted here, and this was intended for instruction in natural history. Several series of charts for this branch were exhibited. Among these, it seems to me that the well-known zoological charts by Lehman-Leutemann (*Zoologischer Atlas*) occupy the most prominent place, and would be of benefit to our own schools. Worthy of notice were also Meinholdt's "*Wandbilder für den Unterricht in der Zoologie*," which probably contain more species than the foregoing work; also Leuckart and Nitschl's "*Zoologische Wandtafeln*," besides Engleder's "*Wandtafeln für den naturkundlichen Unterricht*." The latter work contains a botanical and zoological division. Very good were Niepel's "*Wandbilder des niederen Thierreiches*." Of charts for the anatomy of the human body, there were, besides those by Dr. Fiedler, which are more familiar to us, some issued by Max Eschner, four in number and very much like the former, but perhaps a little better. A pretty pictorial work is that of Jung, with several others, newly issued, "*Neue Wandtafeln für den Unterricht in der Naturgeschichte*," 22 large charts painted on a black background, and each representing a plant or animal type, with many analyses. As a purely botanical picture work may be mentioned, above all, Zippel und Bollman's "*Ausländische Kulturpflanzen*," an excellent pictorial work, with carefully elaborated and very valuable text. In the edition on exhibit the background was kept in black, while the illustrations themselves were colored. The charts in Dodel-Ports "*Anatomisch-physiologischer Atlas der Botanik*" showed very fair illustrations. The work by Lubarsch, "*Wandtafeln zur Blütenkunde*," showing flower diagrams of various coloring, I consider very valuable in the instruction of plant families.

Fine biological and zootomical preparations were exhibited by W. Haferlandt, of Berlin. They were preserved in alcohol and kept in air-tight, square glass bottles. As examples, I quote of the biological preparations: Common frogs (two specimens of spawn periods), nine larvæ, one younger and one older frog, besides a working bee (eggs, larvæ, chrysalides, full-grown insects). Of the zootomical preparations: Large house rats (opened and the interior organs exposed); further, a bird, a fish, a helix, a crawfish, etc., treated in the same manner.

School material which was not at the same time material for instruction was sparsely represented. A kind of blackboard deserves mention. In one kind the board itself was made of black glass. These boards or slates are manufactured by F. Bender, in Dusseldorf. It was easy to write on them; they are easily cleaned and are no doubt of greater durability than blackboards of wood. Their surface is lusterless, although they are of glass. Another kind of blackboard was exhibited by A. C. Lemcke, of Cassel. These were made of papier-maché, long and lusterless.

The pupils' work occupied only a small space in the German exhibit, nevertheless it was not entirely absent. Some series of copy books, drawings, manual work, etc.,

from various kinds of schools, were exhibited. Among others, there was a collection of compositions by graduating classes of 1892, from 20 secondary schools in Prussia, belonging to different grades.

#### NOTES IN REGARD TO THE WORLD'S CONGRESSES.

By KIRSTINE FREDERIKSEN, Copenhagen (Frederiksberg).

In connection with the World's Exposition at Chicago a number of congresses were held during the summer, at which representatives from all parts of the world met. Mr. Charles Bonney, the president of these congresses, expressed the hope in his opening address that they, as well as the Exposition, might aid in the promotion of general fraternity and harmony among the different nations. One of the speakers said that he considered the Exposition to be an "annex" to the congresses which the participants should not fail to see. Several celebrated persons from Europe were present specially for the purpose of delivering addresses at these meetings. Unfortunately, some representatives restricted themselves to sending in papers, which were read by other persons, while the great names were, nevertheless, displayed upon the programme. To the Americans, who are fond of having hobbies, these congresses frequently seemed to be of much greater interest than the Exposition itself, however proud they were of the latter. They threw themselves with astonishing vigor and independence into the discussions; yet even the most callous European could hardly fail to become interested in the variety of types and conceptions which he met here. A critic could have found various things to criticise, but the person seeking for instruction was rarely disappointed.

The last two weeks in July were devoted to education in all its numerous forms, and there was scarcely an educational question which did not appear on the programme and in the discussions. Sometimes the proceedings took the form of a simple debate; more frequently a number of previously prepared treatises were read, viewing the subject from different points. By addressing their words directly to the audience the speakers often succeeded in having a theme well discussed. Most successful were the "round-table" discussions.

Mr. Harper, rector of the new University of Chicago, although a clerical gentleman, seems to be well informed in worldly matters. He thoroughly understood how to engage prominent professors for the university; many of them are distinguished scientific men of mature age, who attract pupils, and there are younger men who can bear the burden of heavy work. The university, recently founded, has already, among other collections, a richly equipped psycho-physical laboratory, which was in full operation within the Exposition grounds. In the selection of the women professors the authorities seem to have been very fortunate. Mrs. Martha Foote Crow, professor of English literature, who took an active part in the congress, gave an excellent lecture on liberty of teaching at the university. "Too often," said she—no doubt she is perfectly right in her assertion—"the leading mind at the smaller American universities is proved to be an energetic person, but narrow minded withal, and sectarian interests are promoted above science."

The question of coeducation at the university was also treated thoroughly by Mrs. Crow. In her opinion coeducation is worthy of recommendation, though only as the smaller of two evils. As in England, many women in America, especially in the Eastern States, prefer a university education in institutions for women, even if they are in favor of coeducation in the lower classes of the schools. I heard the argument advanced in a private conversation that the young girls easily become conceited by studying with men, because the latter rarely read with as much diligence and earnestness as the girls. In a series of pupils' exercises from a high school I found the same opinion expressed by boys.

In addition to the excellently equipped women's colleges of the East and the coeducational universities, usually found in the West, there exists in America a third form—the "Annex," at Harvard University. The professors who give instruction to male



students hold separate lectures for women. This is doubtless only a transition state, called forth by the peculiar prudery that reigns even in the most cultivated society of America (see Howell's novels). Mrs. Crow stated that she had been confirmed in her faith in the coeducation of the sexes when visiting European universities, as she had been especially impressed with the fact that young men are greatly in need of the comradeship of women.

Another woman advocate of coeducation in universities called attention to the fact that the mere admission of female students to an ordinary university could not be considered the final solution of the question. Such a solution could only be found in the proper arrangement of the course of study and in taking into consideration the influence consequent upon companionship and cooperation.

A notable woman who attracted special attention was Elizabeth Hughes, from England, directress of a teachers' seminary at Cambridge University. Her most excellent thesis touched principally upon the education of teachers, both for higher and lower schools. She held the decided opinion that the acquirement of general knowledge should be separated from the technical or professional education of teachers, which should cover at least a whole year. Let the young men and women first endeavor to become well educated, and then let them devote all their mental power and energy to the study of their special profession as a teacher.

Miss Hughes herself received a university education, and she, with Mrs. Crow, anxiously desires an international organization for the higher education of women. In 1882 the society of "The Collegiate Alumnae" was founded in the New World, with the twofold aim of encouraging a high standard among women students and of making their knowledge and education productive in practical life. This society has so high a reputation that universities and colleges consider it both an honor and an advantage if their students are admitted as members. Its exhibition in Jackson Park indicated that it had taken hold of such practical problems as the so-called "College settlements," a kind of "people's palaces," which are exclusively conducted by college girls, and it has also taken up work of a more theoretical character, as, for example, the study of child nature. The idea of extending this society by means of European branch institutions seemed to meet with the approbation of the majority of women who had received a university education, and was especially favored by the English women.

The protection of higher education against a too rapid extension is a problem of urgent importance in America. For this reason, members of the most prominent universities were appointed at the congress, and it is hoped that they may find means for preventing unworthy persons from obtaining the doctor's degree.

Of more positive interest were the congresses at which the university professors from Worcester and California submitted the results of their psychological experiments. They, like the women who received a university education, study the child's early manifestations of soul life with special interest. The leader of this school of young, enthusiastic men and women is Dr. G. Stanley Hall, president of Clark University, Worcester, Mass. This university is the center of a recent pedagogical movement. The normal school students of the city stand in close relation to the university, whose professors take pleasure in lecturing to the future public-school teachers, while these willingly collect various facts from daily school life and submit them to the disposal of the learned experimentists. In an interesting lecture at the congress President Hall expounded his thoughts on the relations between pedagogy and psychology. "The hour has come," he said, "when the Americans are no longer in need of the leading strings of the Germans. So much young and fresh talent ought to be able to create something original."

When we consider the result of the congress, we may say that experiments are always carried on on a broader basis in America than with us. In regard to child psychology we have (with a few exceptions) during late years been directed to whatever can be learned from Preyer's observations of a child. When the Ameri-



caus take hold of a question, such as the color vision in children, examinations are simultaneously carried on in Boston with perhaps 500 children, in Worcester with double that number, and in California with from 5,000 to 6,000 children. Mrs. Dana Hicks, from Boston, gave some very interesting statistics on this subject. As a prominent representative of Prang's methodical instruction in drawing, she put great stress upon the importance of cultivating the child's sense of color. Several curious facts were mentioned. Among others, that difference of race makes itself conspicuous in the little child's partiality for certain colors. White children prefer—or recognize—first, yellow and red; negro and Chinese children, usually blue or green. A young professor, Mr. Barnes, from the new university in San Francisco, showed a number of quite simple drawings made by children of all ages in illustration of a piece of poetry read to them. Just as surprising and amusing as were these drawings—reproduced upon the wall and enlarged side by side with the originals—just so ingenious and sympathetic were his interpretations of what the little ones intended to express. In the Pedagogical Seminary and the American Journal of Psychology one can follow the proceedings and experiments carried on by that group of men and women who gather around Dr. G. Stanley Hall.

Taking place at the same time as the congress of "Experimental psychology" was that of "Rational psychology." A strange contrast it made; a meeting of men of venerable years. Their speech seemed in accordance with their age; in so far as I could understand, a mixture of Emerson's transcendentalism, of German philosophy, and American theology. However, at a later meeting, I met on that side a youthful professor, a man with a powerful head, and who was evidently highly gifted, Mr. Royce, from Harvard. He tried, apparently, to enter into a compromise with the representatives of the Roman Catholic Church. Another group of younger men represented the "Herbartian school." Professor de Garmo, the author of popular educational text-books, seems to be the leader of this movement, which is by no means inferior to the above mentioned in regard to the enthusiasm and ardor with which they endeavor to introduce their theories into practical school life. Some dissension arose in respect to the practicability of Herbart's psychology as a foundation of education, while harmony reigned in regard to the adoption of his practical educational ideas concerning correlation of the various branches taught at school. As original writers and eloquent advocates of the latter, several teachers from Francis W. Parker's Normal School, near Chicago, made themselves heard.

Mr. Parker himself discussed the subject "What shall be taught in the public school?" He is known as one of the most prominent "faddists." A "fad" is something temporarily fashionable—a kind of epidemic—and the taxpaying citizen places under that head all modern subjects that cost money, such as slöjd—sewing included—drawing, physics, and foreign languages. The press and a powerful party in the municipal council designate the introduction of such professional training as contrary to true American theories. The German population alone, it is said, want the introduction of a foreign language in the schools, and a storm of opposition is heard in regard to expenditures for teaching sewing and manual training whenever a woman is proposed as candidate for a position in the municipal council. It is assumed that there will not be time enough given to the poor children for acquiring a knowledge of the three useful R's (reading, 'riting and 'rithmetic). Probably all this commotion is raised in the interest of the taxpayers and their votes on election day.

On the other side stand, for instance, the adherents of Prang's method of drawing, at present in use in Chicago. They proceed with so little consideration and make such high demands for certain sets of apparatus that forcible remonstrance is easily understood.

Great impression was made by the lecture of Rabbi Emil Hirsch on the subject of manual training. He told the Americans the truth on this subject. Their unbounded admiration for "smartness" and exclusive culture of the intellect causes a neglect

of both physical training and manual labor. The American press asserts quite undisguisedly as something perfectly natural and correct that the Americans leave the foreigners to do the manual labor, while they themselves work with the brain.

Meanwhile, in the pedagogical world, the current takes a very different trend. This was plainly proved by the fact that the discussion on the kindergarten and its principles played so large a rôle at the teachers' congress. The many manual training exhibits, sent in by public schools, seemed to give significance to the words of those people who maintain that the press exerts little influence in America, while, on the contrary, the so-called "faddists" indicate greater wisdom by going on in their own way, with or without the assistance of the press.

### SOME CHARACTERISTICS OF THE EDUCATIONAL EXHIBIT OF THE WORLD'S FAIR.<sup>1</sup>

By M. EUGRAPHE KOVALEVSKY,

Delegate of the Department of Public Instruction in Russia.

The first three universal exhibitions, those of London (1851 and 1862) and of Paris (1855), did not contain an educational department. This feature appeared for the first time at the second Paris Exposition, in 1867, and met with considerable success. At the Centennial Exposition in Philadelphia, in 1876, the department of public instruction received due consideration, and visiting foreign instructors were enabled to become acquainted with the American public school system. Only a limited number of States, however, took part in it—twelve in all—and their exhibits were far from complete.

The present Exhibition naturally could not dispense with the educational department. Americans are proud of their public school system, and resolved not to spare any pains to represent it at the Exhibition in the most complete manner. Besides all the States, the different religious denominations, educational societies, publishing firms, and even private persons, were invited to send their exhibits. The result was an enormous number of exhibits, for the accommodation of which a space was assigned many times larger than that of the last exhibition.

The American exhibit occupied 175,000 square feet and the foreign exhibit 50,000 square feet. The number of exhibits in this department, judging from catalogues and lists furnished, must have been at least 25,000 or 30,000, and as some of these exhibits contained 100 or more different objects, the whole was a proof of the unprecedented development of the art of instruction in America, as well as in other countries.

Considerable embarrassment was caused to those interested in educational matters by the fact that these exhibits were placed not only in the Manufactures and Liberal Arts Building, but also in many other buildings. \* \* \* The chief interest centered, however, in the exhibits placed in the Manufactures and Liberal Arts Building. The exhibits in the different State buildings were outside of competition.

In the American department the chief importance was given to elementary instruction. By this is understood in the United States the instruction given in the schools for young children, kindergarten, infant schools, primary schools, grammar schools, and high schools.<sup>2</sup> Here belong also evening schools, special training schools, and normal schools of different grades, whose business it is to prepare teachers for the different kinds of schools. \* \* \*

Having made an arrangement with L. de Dimcha, delegate of the department of instruction from Russia, under which I took charge of elementary instruction, while

<sup>1</sup>Abridged from complete report in the journal of the minister of public instruction, St. Petersburg, 1893-1894.

<sup>2</sup>M. Kovalevsky is in error here. High schools in this country are always classed as "secondary."—Ed.



he took up secondary and higher education, I shall, in my report, speak principally of the elementary side, and refer to the other only incidentally. \* \* \*

He states that "the arbitrary mode of naming institutions of learning in the United States must have presented a considerable obstacle to correct classification. In absence of a normal classification fixed by law, States, municipalities, and private persons give their institutions names which do not correspond to the reality. In many institutions named universities the pupils receive only secondary instruction, while some colleges, which contain several faculties, in reality correspond to universities in the European sense of the word.

"On the other hand, there are colleges, Girard College, in Philadelphia, for instance, which consist really of a preparatory school with some professional instruction. 'Academies' sometimes appear in their course of instruction below the public high schools, and these last again are not at all alike. An entirely inappropriate term is 'State normal university.'

"It is evident that this variety of names causes a great difficulty in the correct classification of the institutions; but whatever was done in that direction will prove of assistance for future exhibitions."

The diagrams and statistical tables, seen in connection with the State exhibits, "proved very useful, as they enabled the visitor to decide whether the exhibit deserved a closer examination." \* \* \*

The phonographs presented very original innovations. At a certain time they were wound up, and delivered opening addresses and discourses on public instruction and sometimes—what was still more interesting—the explanations of teachers on different subjects, their questions, and the answers of the pupils; or again, a lesson in music and recitation. The State of Colorado exhibited besides a very interesting innovation, a stenographic report of class recitations.

Photography, of course, played a very important part. Besides the usual collections representing buildings and pupils, there were some instantaneous photographs representing pupils at work in the class room. The most complete exhibit in that line was from the State of Indiana. These photographs were very interesting; some of them represented the pupils during gymnastic exercises. The Boston Normal School had a series of them showing the positions of girls during the exercises. The faces in these were veiled in order not to show the features. Drawings vied in number and variety with photography. There were thousands of these drawings beginning with the simplest by children of 6 or 7 years, and finishing with paintings in oil and water colors.

In the first rank must be mentioned here the Industrial Art School of Philadelphia; a very high-sounding name for an institution where the pupils of intermediate schools come twice a week to receive instruction in drawing, modeling, and wood carving. This school has worked out a new method in drawing which attracted considerable attention at the Exhibition. According to the idea of Mr. J. L. Tadd, the director of this school, the drawing is done by the pupils on the blackboard, free-hand, using both hands alternately.

Of the Russian representatives, Prince Wolkonski and Mme. T. B. Semetchkine pronounced in favor of the system. Mr. T. H. Gerb expressed himself as skeptical. In my opinion the system is deserving of investigation, both from a hygienic and educational point of view.

The manual training exhibit occupied a very considerable space. The collections in this were of three kinds: the Swedish (*slöjd*), the French (the system of *Salicis*), and the American, which is still in a state of development.

Side by side with the manual training exhibit were placed an infinite number of articles prepared according to the Froebel system in the kindergarten schools. Collections of models in clay made in these latter schools and also in the lower grades of primary schools filled the show cases of the State exhibits.



Some of the States did not content themselves with the above-mentioned exhibitions, and had arranged some exhibitions of the school children at work. In the Illinois State exhibit were two of these, a Froebel school and a school for the blind.

In a separate building put up by the Indian Bureau was an exhibition of the Indian school system. The pupils were living in the building, and were also preparing their own food there.

Among the State exhibits those of the older States excelled. The first place among these must be accorded to Massachusetts, the city of Boston at the head, the so-called Athens of America. \* \* \*

Exceedingly interesting in this department were the photographs of free public libraries, which exist in such numbers and are so situated throughout the State [Massachusetts] that the whole population, almost without exception, has access to them. \* \* \* A magnificent and extensive exhibit was presented by the State and city of New York. \* \* \* Not less extensive and complete was the exhibition of the State of Illinois, in which is the city of Chicago. Besides the exhibition of children at their work and the model schoolroom, this department showed very rich and complete collections.

The manual training work was very fine. The first place was occupied by the city of Chicago, whose exhibits were excellent. Both of the State normal schools sent interesting exhibits.

Of the exhibitions of the Northwestern States the best was from Minnesota. A number of cities and towns took part in it, but the chief place belonged to St. Paul and Minneapolis, twin cities. The general course of elementary instruction was very complete there.

In the exhibit of the State of Indiana the principal place also belonged to two cities, Indianapolis and Laporte. The first of these sent a beautiful collection of photographs. In the schools of this city the method of teaching is based as far as possible on the immediate observation of nature.

Exceedingly interesting were two large wall diagrams showing the distribution of young people's reading circles and of reading circles of teachers. In the State of Indiana nearly every school has a library attached, to which the pupils have access. \* \* \*

The teachers also have their special clubs and circles, the aim of which is principally to discuss the latest works on education and compare views on the same. \* \* \*

From Pennsylvania, as one of the richest and most advanced States of the Union, more could have been expected. However, the superintendent had sent a very complete report of the school work and statistics of public instruction. The visitor was impressed by the great number of schools in the State, 23,000.

The department of the State of Colorado was interesting by its exhibition of phonographs already mentioned, and the stenographic reports of school work of the city of Denver. The English language is particularly well taught in the schools of that State.

The rest of the exhibits were simpler in character, but full of interest.

Besides the exhibits of kindergarten connected with the different State exhibits, this system of instruction had several sections exclusively devoted to it. The kindergarten, as a preparatory step to the primary school, has met with success in America. It attracts the attention of teachers, although two-thirds of the kindergartens are private institutions. They have not yet become a part of the system of public instruction, as is the case in France with the so-called "maternal schools," and so far exist only in cities. At the present time 137 cities and several States have acknowledged their usefulness and furnish means for their support. Besides several local societies, there was established in 1892 in the city of Saratoga the International Kindergarten Union, the aim of which is the unification of efforts in that direction.

The different show cases in this department belonged to the Kindergarten College of the city of Chicago. The work of the pupils was systematically and beautifully displayed in the show cases. In the first division of the school, children of  $2\frac{1}{2}$  to  $5\frac{1}{2}$  years attend; in the preparatory department, children from  $5\frac{1}{2}$  to 6 years; and in the elementary department, children from 6 to 7 years; in the industrial classes, children are taught from 6 to 14 years of age. The house of Pestalozzi-Froebel presented the kindergarten system in its most complete and purest form. Close to the house was a large garden with all the necessary complementary arrangements. For the training of instructors in these schools there is a kindergarten college in the city of Chicago. The course in it embraces three years—the studies are theoretical and practical.

For technical education we shall point to a group of institutions called normal training schools. Two schools of the city of Chicago took part in the exhibition—one for beginners, the other a professional school; also technical schools of the following cities: St. Louis, Toledo, Baltimore, Cincinnati, and New York. Near by was the exhibition of the Jewish school of Baron Hirsch, also from New York.

For an exposition like the Columbian this is a very meager presentation of technical education, particularly for a country where technical knowledge stands so high. However, Americans do not deceive themselves on the subject and confess that technical education is not as general with them as it ought to be.

Tverskoi, the author of *Letters from America*, speaks of a justice of the peace who, having sentenced a young offender to the reformatory, congratulated him on the happy prospect for him of acquiring a trade, which, owing to the lack of institutions of that kind, did not fall to the lot of many.

From the present short review of the exhibition we shall have to exclude the institutions for the blind, for the deaf and dumb, and for the feeble minded; also the schools for the colored race, and the school of the Woman's Christian Temperance Union, whose work is deserving of particular attention.

The department of school appliances, text-books, and school material was located in the northern part of the building. The exhibit of books for school use was very large. \* \* \* Besides the International Educational Series, Appleton has published many volumes of compilations on similar subjects. Other firms pay principal attention to text-books, which, being in great demand, prove very profitable. There is a great variety in the quality of text-books. Some of the poor, out-of-the-way schools, consisting of one class, use only small editions printed on cheap paper, while the rich city schools of such centers as New York or Boston and St. Louis use very handsome editions. This variety, however, has its inconveniences, and lately there has been a tendency to centralization in that line.

We made a collection of text-books used in the primary schools which can give an idea of the character and distinctive features of the books used for instruction in American schools. It has been forwarded to the educational library of the department of public instruction in Russia.

In the exhibit of the United States Bureau of Education a model library of 5,000 volumes was arranged. Reports and statistical tables were displayed; also photographs of school buildings. A separate show case was devoted to the schools of Alaska.

The model library was selected by a special commission of experts from the American Library Association. It consisted of 5,000 of the most suitable books, in the opinion of the experts, for a city public library. The publishers' prices of the books, without reduction, amounted to \$12,000. All these books were entered in a special catalogue of 300 pages.

Those interested in the formation of a library were especially attracted to this exhibit, as all the most modern inventions for the cataloguing, finding, and preservation of books and pamphlets were made use of. At the close of the Exposition this library will be sent to Washington to be placed in the Bureau of Education.



Professor Rice, who was commissioned by The Forum to make a study of the school work of the country, characterized the first impression of his visit by the very expressive word "chaos." Doubtless there is a great difference in the mode of instruction, programmes, and results achieved by the different primary schools. At the same time they also have a great deal in common; essentially the same American spirit animates them all. There is also a constant tendency toward a unification of the methods of instruction.

Of the three fundamental principles on which the work of public instruction is agitated in western Europe, namely, compulsory attendance, free instruction, and neutrality in regard to religion, the two last are acknowledged in all the States of the Union. \* \* \* Gradually, but not without a severe struggle, the people came to the conviction that elementary education must be accessible to all, to the poor as well as the rich. A decidedly new departure in this direction was taken in 1837 under the leadership of Horace Mann, the well-known worker in the educational field. The free school system is at present firmly established in the States of the Union. \* \* \* The second in importance is the nonsectarian character of the schools, which is acknowledged by all the States. A great many different denominations and sects exist in the Union, and in the absence of a state religion, and in the presence of a complete separation of church and state, it is natural that the schools should exclude from their programme dogmatic theology. The children of the different denominations receive religious instruction from their spiritual instructors in the so-called Sunday schools. In the public schools the duties of the teacher are to set their pupils a good example in morality and good conduct. In some States the custom of reading the Bible in the schools is still kept up, but without any special comment being made.

The third principle, compulsory attendance, is so far in force only in 27 States; the others are on the way to its introduction. Since 1886 this tendency has been increasing. Free admission of all children to the schools exists in principle in the Northern, Eastern, and Western States. All the children of a certain district or town have a right to attend the same school, without distinction of sex, condition, or race. In the 16 Southern States separate schools are established for the negroes. In practice the children of colored races attend separate schools in the other States also. This is principally the case in the primary grades; in the higher grades this distinction is not made.

A very characteristic trait of American schools is the coeducation of the sexes and the similarity of the education of girls to that of boys in all branches. Coeducation is in practice now in the whole country, with the exception of a few large cities. The girls study with the boys, not only in the elementary schools, but also in the secondary schools and in the universities. The results, according to the unanimous testimony of American instructors, are very satisfactory. The young people are gentle in their behavior in class; the girls work more diligently in trying to emulate their companions. There are no shortened programmes or simplified text-books for girls; they are working with the boys on an equal footing and frequently surpass them in the progress made. \* \* \*

In the sphere of State legislation a tendency toward unification and centralization is noticeable. At the head of the school work of each State stands (1) the State board of education, (2) county boards of education, (3) city boards of education, (4) district school boards. With the committees of the first three orders are superintendents, whose duty it is to inspect the schools and the school work. \* \* \*

In view of the great importance given to school hygiene in recent years, it is the duty of inspectors to see that all the rules are complied with in regard to vaccination, the prevention of the spread of contagious diseases, heating and ventilation of the buildings, etc. The number of supervising officers in this branch in the United States is 2,694.



In the public press and in the reports of the Commissioner of Education it is constantly pointed out that this work has not yet attained its proper proportion. The opposition to it comes from the local school committees, but the tendency is to increase it. The school committees of large cities rival frequently in influence the State committees. They are generally quite independent and merely send their statistical reports to the State superintendent. In the schools of the far West, situated on the prairies or in mountainous districts, the teachers manifest great independence in their school work, in teaching as well as in the government of the schools. But it is different in the older States. There the school boards define very carefully how and what shall be taught during the year. The regulations to this effect form whole volumes—a schoolroom guide, where teachers can find full instructions for action in every possible contingency. These regulations for the duties of teachers are not made from a desire to narrow down their liberty of action, which would be contrary to the American spirit, but in view of a practical necessity.

Owing to the conditions of American life, teachers do not remain long in their places. Buisson, in his valuable work on American schools, mentions the State of Kansas, where one-third of the teachers are changed annually; in the New England States it is one-fifth. The certificates presented by the candidates for teaching testify to their knowledge of subjects taught, not to their ability to conduct a class; consequently in some of these regulations furnished to young teachers innovations are expressly forbidden, as they would lead only to a loss of valuable time. The committee makes a written contract with the teacher in which all the duties of the latter are enumerated. At the end of the year the teachers have to present to the superintendent a full report on the condition of the schools intrusted to them.

For the preparation of teachers there are special institutions—normal schools—in which the course lasts from two to four years. For negro teachers there exist special normal schools and educational institutions to the number of 40. One-third of them are supported by religious and educational societies. Graduates of normal schools do not form a large percentage of teachers.

	Per cent.
For Maine .....	28
For New Hampshire .....	17
For Connecticut .....	42

And only in the small State of Rhode Island it amounts to 70 per cent.

The female teachers outnumber the males. In the Froebel schools they reign supreme, and predominate also in the one-class schools, in the elementary and intermediate schools. \* \* \* Evidently the passing of elementary instruction into the hands of women exclusively is only a question of time in the United States. \* \* \*

In the programme of study for the different elementary schools there is great variety. American elementary schools are divided into two large groups, the graded and ungraded schools. The ungraded schools consist of one class with one teacher. Their principal aim is to teach those attending them "the three R's": Reading, writing, arithmetic. As soon as there is an opportunity these schools are converted into graded schools. The graded schools, as already stated, are of three kinds, primary, intermediate or grammar, and high schools. The course in these extends from five to six or eight years. \* \* \*

The English language is unconditionally compulsory in the public schools of the United States, even where the majority of the population speak a different language.

The American schools have a very difficult task to perform. They have to train children to become citizens capable of taking part in public affairs from such diverse material as the native Yankees, the negroes, the Indians, and the foreign immigrants, consisting of Germans, Irish, French, Italians, Swedes, Norwegians, Poles, Russians, and Danes. All these persons could not take part in the affairs of the country unless they were familiar with its language, for which reason the schools

pay particular attention to this instruction. The number of schools and pupils is very great, and during the last decade great progress has been noticed in this direction. \* \* \*

Private denominational elementary schools are of little importance. Of the whole number of pupils only 9 per cent attend them. The remaining 91 per cent attend the public schools. \* \* \*

The high average cost of school buildings in the United States is due to the fact that they are put up now in the most modern style. They are remarkable for the comfort and fitness in their arrangement of class rooms as well as for handsome architecture. Many of the schools contain large halls for gymnastic and other exercises and meetings, workshops for manual training, libraries, and physical and chemical laboratories.

In contrast to these city schools, the country schools have frequently very poor accommodations. In the mountain districts and on the prairies the common log schoolhouse is still met with. The majority of these schools have frame buildings. These last are a special American invention. Externally they resemble pretty cottages; they do not cost much, and are furnished complete from the manufactory. But they have their disadvantages; in the winter they are cold, in the summer very warm, and when the wind blows high they are turned over like card houses.<sup>1</sup> The reports that cyclones have carried off whole villages are not fables. I myself had a chance of seeing a little village destroyed by the wind. The inhabitants had encamped around the spot and seemed not to grieve much about what had happened. Some of the houses, among them the schoolhouse, which had been lying on its side, were propped up, and the people were rebuilding the other houses.

The division of gymnastic apparatus was especially examined by T. Tr. Guerd, who purchased at the Exposition some portions of the apparatus which seemed to him particularly new and interesting. Such gymnastic apparatus as was purchased was forwarded to the educational museum connected with the military institutions in St. Petersburg, where it can be seen by those interested in the subject. Besides the section of gymnastic apparatus, a very extensive collective exhibition of the so-called North American Turn-Verein was deserving of attention.

These gymnastic associations, judging from the pamphlets at the Exposition, have for their aim the physical development of children, youths, and grown persons; besides, they are trying to improve the mental development of their members by instituting reading circles and clubs where debates are carried on and pamphlets and books published. The leaders in this movement assert that gymnastic exercises, practiced in circles and in schools, tend to form a nation of good soldiers in case of need, and in the meantime develop in the young courage, independence, presence of mind, and cheerfulness. \* \* \*

The collective exhibit of commercial schools attracted the attention of specialists and merchants. Commercial education in America presents peculiar characteristics suited to the local needs and circumstances of the great transatlantic Republic. \* \* \* These colleges, or schools, very well supply the demand for trained bookkeepers, stenographers, and typewriters, and are a great convenience to candidates for these positions.

At the Universal Exposition in Paris in 1889 the Catholic clergy declined to take part, the relations of the clerical power and the Republic were strained, and in the French educational department the public school reigned supreme. It was concluded to make up for this omission at the Columbian Exposition.

According to the idea of Cardinal Gibbons, of Baltimore, there were to be collected for the Exposition exhibits of Catholic schools of the whole world, and the arrangement was to be as interesting and extensive as possible, in order to present to the public the results of the labors of the Catholic clergy in the field of popular

<sup>1</sup>In reasoning from the particular case narrated in the closing portion of the paragraph to the general, the author has allowed too free play to the imagination.—Ed.



instruction, and thus to advocate the idea of parish schools. To the appeal of the Cardinal the majority of Catholic schools of America and some institutions of France, Spain, and England responded. The exhibits from these countries formed together a collective exhibition which occupied the enormous space of 29,000 square feet. There were taking part in it 12 brotherhoods of Benedictines, Capuchins, Jesuits, and the order of Christian Brothers; 37 sisterhoods, of which we noticed the Sisters of Notre Dame, the Sisters of Mercy, the Sisters of the Poor in Christ, etc. \* \* \*

Of the European institutions there were represented at the exhibition 63 from France, 5 from Spain, and 2 from England.

There was plenty of material for inspection, even an excess of it. Most prominent were female handiwork and drawings. The Christian Brothers exhibited in their American schools the work of pupils in the English language of very good quality, also in composition. In the diocese of Kentucky some water colors were prominent; in woodwork a carved altar of very fine execution, the work of the pupils of St. Joseph's Orphan Asylum, in Columbus, Ohio.

In looking over the programme of study in the parish schools of the diocese of Philadelphia I noticed that in the grammar grade schools the geographies only mentioned, in regard to Russia, that the River Volga flowed there and that there were three cities, St. Petersburg, Moscow, and Odessa.

The schools for deaf-mutes of St. Etienne, Besançon, Bourg, and Bienne exhibited appliances for the instruction of their pupils, with illustrations of the position of the lips in pronouncing the letters. In the commercial department of the schools of Havre a small museum was established, where all imported products were exhibited as an assistance in the study of commercial geography and natural science.

In some of the French schools the study of stenography was introduced as an innovation, which is of great practical importance at present. In examining the albums and collections in this department I was more than once surprised to find that the character of the subjects was throughout connected with the church. The drawings were copies of images and church frescos; architectural work was devoted to church edifices; even cabinetmaking and the ironwork had a church character. Such specialization can hardly prove desirable, in view of the small industrial importance of such work. Taken in general, this department showed that the Catholic clergy was working very energetically in the field of public instruction.

The department of the different Protestant churches and religious associations presented a mass of facts in regard to their activity in public instruction. The first place must be assigned here to the section of the Congregationalists. \* \* \*

The Methodists have founded 10 religious seminaries, theological faculties at some universities, 45 male and female colleges, and 61 classical seminaries; the Baptists, 34 colleges, 7 theological institutions, and 50 academies, principally in the Southern States; the United Brethren in Christ, 2 universities, 9 colleges, 6 academies, and 1 male seminary; the Disciples of Christ, 5,756 Sunday schools. In this department was also the exhibit of a very attractive association, called the Young Men's Christian Association. Branches of this association exist in many countries of Europe, Asia, and Africa, and in the islands of the Pacific. In Russia (probably in Finland and the Baltic provinces) there are 9 of them. The association exercises an extensive and beneficial influence, and its activity has the sympathy of the people.

The Jews had two exhibits, the professional institutions of Baron Hirsch and the collective exhibition of the Alliance Israelite Universelle. The schools of this association did not present a denominational character. Their aims are purely educational, and they try to avoid the narrow spirit of exclusiveness. It has nearly 40,000 members. It has taken up the difficult task of assisting the moral and intellectual development of the Jews, of encouraging the acquirement of professions and trades, of struggling against their ignorance and faults, frequently the result of ill-founded prejudices, and of assisting as much as possible in their emancipation in those coun-



tries where they do not enjoy full civil and religious liberty. This association, working outside of political and religious questions, directs its activity, according to a circular published, principally to the work of education, and has established schools founded on the modern demands of education, in place of the old Talmud Toro's school, which is of a sectarian character. These schools have been established in Turkey, Bulgaria, and on the shores of the Mediterranean in Asia Minor and Africa. The show cases at the Exposition were filled with a quantity of articles; the exhibits of agricultural institutions excited special interest, as they proved that with proper education the young Jews were capable of taking an interest in agriculture, for which in Russia they generally show an aversion.

In the same proportion as the exhibit of the United States was extensive, many-sided, and interesting, the exhibit of foreign countries was modest and incomplete, with the exception of, perhaps, Germany, Russia, and France. This is quite natural. Those who come to an exhibition generally come with the intention of studying the local educational system, caring comparatively little for the education of foreign countries, which is already known to them. The school, and particularly the primary school, is so intimately connected with the conditions and customs of the country to which it belongs that it is necessary for the proper understanding of it to know something of the country itself, of its inhabitants, and to be able to visit personally some of its institutions. Since exhibitions have become so frequent, pupils and teachers would be losing valuable time in preparing for them. In the case of one's own exposition this is different, for it appears to those in charge of public instruction similar to a general examination with the whole nation for its audience.

Of the European countries, Russia, France, Germany, and England had arranged fairly good exhibitions. The first place must doubtless be awarded to Germany for the fulness, variety, and interest of its exhibit. The external façade of the building was very handsome. There were over 500 exhibits sent, representing primary schools, intermediate schools, universities, special institutions of all kinds, and the German department of public instruction. A very large collection of text-books, books, atlases, globes, wall maps, and other school appliances, work of pupils, and photographs completed the exhibit.

The second place belonged to the Russian school exhibit, which occupied five rooms. In the first room was the exhibit of the educational museum—a complete collection of school appliances, text-books, different editions, etc., all very tastefully and cleverly arranged by the distinguished educator, T. Tv. Guerd. Next came the room with the exhibit of the department of communication (roads), and the room containing private exhibits, conspicuous among which was a beautiful show case from the cartographical establishment of Illüne; a copy of the book of Mme. Altchevski, *What the People Should Read*; the section of the association for the extension of the Holy Scriptures, the calculating machine of Oder, the universal school bench of Professor Brandt, of the University of Charkoff, and the exhibits of the Technical Institute of St. Petersburg, etc. To the left of the second corridor were arranged two alcoves; one was occupied by the exhibit of the Central School of Technical Drawing of Baron Stieglitz, the other by that of the School of Drawing of the Society for the Encouragement of Fine Art.

Opposite to these was a large room devoted to the institutions of the Empress Marie. This department was in the care of Mme. Semetchkine, who is well known in America and who was at the Exposition in Philadelphia. The handiwork of women attracted general attention. The Demidoff Asylum for Working People in St. Petersburg had on exhibition a present intended for the President of the United States, a handsome scarf of red satin embroidered after an antique Russian design of the thirteenth century. For the wife of the President was a large sachet, on which was represented the arrival of the steamer *Leo* with American cereals in the unfortunate year of our famine. The majority of the exhibits of the department of

the Empress Marie were presented to the Americans as an acknowledgment of their fraternal assistance. Next came the room of the department of public instruction, the exhibit of which was very complete. The exhibit of the school district of the Caucasus was very complete and interesting. Here also were the publications of the imperial commission for the introduction of reading among the people.

France occupied three rooms filled with cases in which were displayed text-books, other school books, and the work of pupils. Of these last must be noticed the so-called "cahiers de roulement," in which each pupil in turn writes his school task. A book is received in which all the pupils of the class have taken part, and which gives the inspector a clear idea of the condition of the class and serves as a great stimulus to the pupils for carrying on their tasks in an earnest manner. Next to the room of the department of public instruction was the exhibition of the well-known Paris school "École des Arts et Métiers."

In the English division of the exhibition in the Manufactures Building was the exhibit of the city of London, of the science and art department which had sent the work of pupils, and of the University of Oxford, demonstrating the system of university extension. This system is known in Russia through the works of the Moscow professor, T. T. Yanjul.

In the Woman's Building, Great Britain presented many interesting things in regard to female education, principally the higher education; in primary education there was very little to be seen in this building. Very interesting and convincing was an exhibition of card photographs of the babies of some ladies who had received a degree in the English universities. The object of these cards was to show that study did not unfit women to be mothers. The proof was very striking, for the babies looked so well, so fat, and so full of life that it was a pleasure to see them, and the mothers by their side in their professors' caps had reason to be proud of them.

The attention of foreign educators and representatives of learning centered, after the United States, principally on the other American countries and colonies. The exhibitions of the two countries adjacent to the United States, Canada and Mexico, although placed side by side, were very dissimilar. The race characteristics of each were immediately apparent. The exhibits of Canada occupied several rooms. There were sections of public instruction in the different provinces, which are perfectly independent of each other in this respect; there were those of Catholic and Protestant schools, and those of private firms and individuals.

Among the provincial exhibitions the most interesting was that of the Province of Ontario. The department of public instruction of this Province had published for the exhibition a very excellent book, *The Educational System of the Province of Ontario*.

In Mexico public instruction has advanced considerably of late years, but the percentage of students is still only 4.7. In theory, education is considered free and compulsory, but in practice, particularly in the less populous States where the Indians predominate, compulsory attendance can not be enforced yet. Coeducation is found only in exceptional cases. The civilized Indians are taught with the whites. For those not yet civilized special schools are established, where the teachers are young Indians, taken from the same tribe and trained in institutions for teachers. There are in Mexico 2,878 Government schools for boys, and 1,079 for girls; mixed schools, 327; municipal schools for boys, 3,176, and 1,056 for girls; mixed, 503. Total, 9,039.

There are schools for the training of male teachers, and one in the City of Mexico for the training of female teachers. Besides these, there are in the country 2 agricultural colleges, 1 commercial college, and 3 technical schools for pupils of both sexes. Side by side with the public schools there flourish also a considerable number of private schools, principally under the direction of the Catholic clergy.

Among the countries of South America let us consider in passing the little Republic of Uruguay, which has given a good example of energy and perseverance in the



work of public instruction. Until 1877, when the law for general education was first passed there, the schools were in a very low state. There were only 412 schools in the whole country, and these furnished a limited amount of instruction. In 1891, the date of latest statistics, the number of schools had more than doubled, and the number of pupils was more than three times as great. Education was made free and compulsory; for the training of teachers of both sexes there were two seminaries; the teachers were twice assembled in educational congress; for the study of the latest subjects of investigation specialists were sent to Europe; an educational museum was established at the capital. The instruction in the schools is according to the latest demands in education. The school buildings are improved and well supplied; many have libraries attached to them. The number of pupils to each teacher is 36, which is not excessive. The country has one kindergarten and an industrial school. By the side of the public schools there are also private institutions.

In each department (the Government subdivisions of the country) is organized a committee of public instruction, the members of which serve without pay and each division has an inspector. The Government spends annually one-ninth of its income for public instruction; the price of the education of each pupil amounts to \$13.27. As a result of these efforts there is a great improvement in primary instruction. In the words of the report, "¡El carácter de la enseñanza es educativo, racional, apropiado, rigurosamente gradual, y por lo tanto, progresivo, integro, armonio, vivo, agradable y, sobre toda, práctico á fin de que dicha enseñanza repose sobre bases solides!"

To a Northerner this excessive enthusiasm and delight may appear naïve, but when the object of it is the education of the people we must respect it. Every country could be and ought to be proud of a similar success. The people of Uruguay must have remembered the words of the late President Garfield, that "Good schools are less expensive than revolutions."

It would take too long to examine the other American countries, particularly since only a few of them (Brazil, Jamaica) had school exhibits; for this reason we shall content ourselves with the following statistical table:

Countries.	Population.	Pupils.	Per cent.
Argentine Republic .....	4,036,492	276,983	6.8
Bolivia .....	1,192,162	27,764	2.3
Brazil .....	14,002,335	305,193	2.2
Canada .....	4,829,411	993,823	20.8
Chile .....	2,766,747	122,664	4.4
Colombia .....	3,878,000	93,187	2.4
Costa Rica .....	238,782	17,500	7.3
Cuba .....	1,521,084	50,000	3.3
Ecuador .....	1,271,861	58,308	4.6
Guatemala .....	1,452,003	57,380	4.0
Guiana (British) .....	284,887	27,884	9.8
Guiana (French) .....	25,796	1,678	6.4
Haiti .....	960,000	10,000	1.0
Honduras .....	431,917	23,000	5.3
Honduras (British) .....	31,471	2,450	8.0
Jamaica .....	639,491	75,680	11.8
Martinique .....	324,462	18,073	5.5
Mexico .....	11,632,924	543,977	4.7
Nicaragua .....	400,000	11,914	3.0
Paraguay .....	329,645	25,594	8.0
Peru .....	2,700,945	71,435	2.0
Porto Rico .....	806,708	.....	.....
Salvador .....	777,895	28,473	3.7
San Domingo .....	610,000	10,000	1.6
Surinam .....	55,968	5,684	10.0
Trinidad .....	208,030	19,685	9.4
United States .....	62,622,250	14,377,536	23.3
North Atlantic .....	17,410,545	3,694,067	21.2
South Atlantic .....	8,857,920	1,903,468	21.5
South Central .....	22,362,279	5,647,308	25.0
North Central .....	10,972,893	2,558,378	23.0
Western .....	3,027,613	574,315	19.0
Uruguay .....	706,524	65,621	9.0
Venezuela .....	2,285,054	104,840	5.0



The only province from Australia to take part in this department of the Exhibition was New South Wales. In the whole of Australia the number of students in the different institutions is 256,151, or 22 per cent of the population. The expenses of school education for each pupil amounts to \$18.65, which is a very high figure.

Among the Asiatic countries the exhibition of Japan was most interesting. The movement for better school organization began there comparatively late in 1872. The laws governing the present school system date from the year 1886. Owing to their natural power of imitation the Japanese have taken the European school system, and, after making some slight alterations in it, present it as a national one. The education is compulsory; it is nonsectarian and free, although the children of the rich pay a certain sum on entering the school. The number of pupils is considerable. The small number of girls in comparison with that of boys (less than one-third) shows that the principle of female education has not as yet taken root in Japan. The expenditures for public instruction reach the sum of \$9,000,000, of which 80 per cent is spent on primary education.

Of the other countries in Asia the Island of Ceylon had a separate building where very interesting ethnological collections were exhibited. In public instruction the exhibits were very few, although the cause of education is beginning to develop in this colony. To the north of Ceylon is the great Indian Empire. Here the work of education is still weaker, although on the whole it is making progress.

From Africa, Egypt took part in the Exhibition. The exhibits there were not large but interesting. In the city primary schools both English and French are taught. English language is used in 2,237 schools, the French in 2,840 schools.

In conclusion we must notice the exhibitions of some associations not directly connected with the work of education but whose activity is of a humanitarian character.

The Society for the Prevention of Cruelty to Children and the Society for the Prevention of Cruelty to Animals were fairly well represented.

An interesting exhibit was that of the Society of the Friends of Peace, which counts several millions of members and advocates peace, fraternity of nations, and the establishment of international courts of arbitration, and which is gaining so many adherents. Until the present time there have been seventy-five cases of arbitration between the people of Europe, Asia, and America, which have resulted in a peaceful solution of the difficulties. In 1890 all the States of America had adopted the principle of arbitration. The Peace Society of the last international congress expressed the wish to have this principle introduced in the study of history and to have the cult of war diminished.

The American Bible Society occupied considerable space. The extensive and energetic work of this society is known the world over. Its editions are printed in thirty-two languages, and the Bible published by this society can be found in the remotest parts of Siberia, as well as in the extreme north of Canada, in the center of Africa, and in the torrid parts of Asia.

Lastly, the exhibit of the National Temperance Union showed that the yearly amount spent by the population of the United States for spirituous liquors, tobacco, and stimulants exceeded the expenses for bread, meat, clothing, education, or religion.

With this we shall conclude our brief report on the educational department of the Universal Exhibition in the city of Chicago. This department was, on the whole, extensive, many-sided, and interesting, and embraced every possible kind of institution of learning. The grouping of the exhibits, the introduction of phonographs, the practical exhibition of school children at work, the model school building, the large part taken in the Exhibition by the clergy and by various associations formed its chief characteristics. \* \* \* The departments of foreign countries, particularly of new countries, "testified to the fact that the organization and proper maintenance of public instruction forms at the present time one of the chief cares of a government, and that the fundamental principles of gratuitous public instruc-

tion, compulsory attendance, and the proper training of teachers are generally acknowledged."

Collectively the exhibit of American schools "presented overpowering material. It showed how broad and deep was the spread of public instruction in the United States. Granted that it is not yet firmly established, that there are sometimes inexperienced teachers, and as yet many a flaw in the school laws, yet its general tendency is such as to make one forget these shortcomings."

Americans have reached the conviction that the "ignorance of the people is a shame to the country and its greatest misfortune. They are trying by all the means in their power to dispel the darkness of ignorance, and, notwithstanding great obstacles and the constant influx of immigrants, they are attaining these ends."

\* \* \* It is true that their general school system "presents much patchwork and want of harmony, but in the present feverish state of American life there is no time to wait; the accessible must be made use of. The result shows us thousands of schools spread over the country where millions of children are taught, and the spread of knowledge among the population greater than anywhere else."

The Exposition itself is the "best proof of it. Only an independent, wealthy, and educated people would create such an Exposition, and only an educated and thinking population could appreciate it."

## CHAPTER VII.

### AMERICAN TECHNOLOGICAL SCHOOLS.<sup>1</sup>

Report of Professor RIEDLER, of the Royal Polytechnicum at Berlin.

#### INTRODUCTION.

The question as to what schools in America may be considered technological (or polytechnical) schools can not be answered definitely, since there are no sharply defined lines between the various institutions with regard to that which they teach. Public education is an affair of the separate States and communities, and the conceptions of the State and city boards of education, as well as the views of principals and teachers of the various institutions, differ very much with reference to matter and method of instruction. The consequence is a very great variety of schools despite their uniform nomenclature.

In order to gain a proper point of view, I was obliged, on my earlier journeys undertaken for the purpose of study, to devote more time and labor to the schools than to professional studies. I was not satisfied with the information gathered from catalogues or from visiting the institutions and asking for explanation from principals and professors, who naturally give only a picture of the school as it should be or might be, but fail to let the visitor see the actual results and their connection with the prevailing circumstances. Sound judgment and deep insight could be secured only by long-continued intercourse with former students, now renowned authoritative American engineers, and with young men who are at present students of the institutions. I was actually obliged to become a student myself to get acquainted with particulars concerning which it was impossible to obtain information in any other way.

Owing to the great number of "technological schools" in America (over 200) I had to confine my research to the most noted ones. In this work I enjoyed the cooperation of my colleague, Mr. Gutermuth, of Aachen, which I gratefully acknowledge.

In the following report the characteristics of technological schools are pointed out. A critical comparison with our conditions and institutions is at present precluded. The simple description of the instruction offered requires a thorough study conducted without prejudice, and European standards of measurement must not be applied. Criticism is very difficult, because it is hard to separate it from personal views, and also because it can not be done without entering into the totality of the work of the schools and their historical development. This would lead us back to ancient and to modern educational controversies which must be excluded from the exposé I desire to offer.

Critical comparisons in questions of education are most thankless tasks, not that they are not extremely interesting, but owing to the endless attacks which, as is well known, invariably follow an undertaking like this.

The difficulties caused by a simple comparison of American schools with one another may be seen from the following facts: A contributor of the *Engineering News*, Mr.

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<sup>1</sup>The following report on technological schools, by Prof. A. Riedler, of the Polytechnical School at Charlottenburg, near Berlin, is inserted here for two reasons. It gives an unbiased description of a kind of school concerning which there is not as yet unanimity of opinion in America, and also, because the author offers some standards of measurement and comparison in graphic manner that deserve to be studied. A praiseworthy absence of prejudice distinguishes the author and his report.



Wellington, last year published a series of articles on the establishment and the present status of American schools for the preparation of civil engineers, and thereby rendered great service, since they offered for the first time a review at least of this particular kind of technological school; and he attempted the beginning of statistical summaries that were in every way new and instructive for America. Although Mr. Wellington had refrained, for obvious reasons, from expressing his own opinion of the results of these schools, he was so overwhelmed with communications and corrections that he abandoned the idea of gathering his articles in book form.

These articles contain very valuable statistical matter concerning the schools for civil engineering, which I have used, with some additions collected by myself. His historical statements, those of attendance, and his comparative summaries of courses of study I have used copiously. Through conversations with him I gathered much information and valuable suggestions.

My studies embraced the institutions of learning which prepare for, or give, polytechnical instruction, first of all the universities that have a school of engineering, and then the independent polytechnica. Generally my remarks refer to the schools of mechanical engineering, though many of my remarks hold good for the other schools also.

#### PREPARATION OF ENGINEERS IN THE UNITED STATES PREVIOUS TO 1862.

Engineering as a profession in America dates back no further than 1850. Its first beginnings may have been as early as 1830. Polytechnical institutions are therefore not old; their prosperity commenced at the beginning of the sixties. Hence it is obvious that the greatest number of these schools, especially in the West, are still in an imperfect state of development.

Before the polytechnica were called into existence the preparation of engineers was possible only through self-study, occupation in workshops, private instruction from experienced engineers, or in military schools.

(1) *Self-instruction*.—A large number of the older engineers are self-taught. Self-instruction is not a correct term, for even self-taught men go to school, to the school of experience. Individual experience without comprehension of cause and effect has little, if any, value. Franklin said in his old-fashioned manner, "Experience keeps a dear school, but fools learn in no other." But where experience is coupled with investigation of the connection between cause and effect a basis is given for scientific knowledge. Such a course of development was formerly customary, but is at present considered an exception. It can be demonstrated that many of the most noted engineers of all civilized countries, without having had real "instruction," are yet scientifically equipped, because they have used their experience in the way referred to, and, as a rule, laboriously acquired scientific knowledge. At present it may be said that this expensive and laborious mode of preparation has become very rare in America, so that its description seems unnecessary here.

(2) *Preparation through apprenticeship*.—A second method is the preparation in workshops, which is still popular in England and America. It is astonishing to notice that English engineers, and here and there American imitators, began their course of preparation as apprentices in factories, never enjoyed regular scientific instruction, and yet have become well reputed men in their professions. They still adhere to this system, although they all admit that they had to spend much time and trouble to gain the essential scientific basis by means of self-instruction from books. They further admit that the scientific knowledge they did gain became the absolutely necessary basis of their work. A course of preparation beginning with apprenticeship in a factory leads to a one-sided practical perfection, very imperfect professional knowledge, and to this only if the conditions of self-instruction mentioned are fulfilled. In America this system was only temporarily followed in the New England States, and has almost disappeared.

(3) *Instruction through experienced engineers.*—As late as two decades ago the technical preparation of students through distinguished civil engineers was a course frequently followed in England, and is to this day in the New England States; here and there in other countries it is also followed not infrequently. The preparation of architects in America is almost exclusively obtained in this way. This instruction in private lessons usually lasts three years, but, as a matter of course, is never well regulated. The student must keep his eyes and ears open, ask questions, and arrange his scientific knowledge according to the answers he receives. That which is learned in this manner is of course, quantitatively, very little, but qualitatively more valuable than that which is obtained in schools, because the students obtained it only through thorough study, their own efforts, and hard thinking. That this mode of preparation is so successful in many instances is certainly also owing to the fact that they chose renowned engineers as teachers.

(4) *Military schools.*—Before 1840 real instruction in engineering was offered almost exclusively in the Military Academy at West Point. Up to 1840, even up to 1850, nearly all the civil engineers had received their preparation in this military school. From its establishment in 1802 up to 1862 it prepared about 2,000 students; of these 200 became civil engineers and about 230 entered the military Engineer Corps. Among the former number are the most renowned civil engineers of the country.

The interesting history of this military school has been written by Gen. G. W. Cullum in the Biographical Register of the Officers and Graduates of the United States Military Academy. Charles B. Stuart, in his *Lives and Works of the Civil and Military Engineers of America*, gives information concerning American engineers of the old times. The following table, taken from Cullum's Register, proves the great influence this school has had, and gives the professions which its former students selected. The students who, from 1802 till 1890, entered civil service are grouped as follows:

Diplomatic service and Congress.....	48
Civil service.....	170
State officers, including 14 governors.....	190
City officers, including 19 mayors.....	63
Teachers, including 41 college presidents.....	217
Lawyers and judges.....	198
Agriculturists and planters.....	228
Merchants and manufacturers.....	193
Editors, artists, architects, physicians, etc.....	115
Railroad officials, including 77 directors.....	157
Civil engineers.....	228
Chief engineers of railroads.....	61
State chief engineers.....	14
Total.....	1,882

During the first few years of its existence the Academy at West Point was of no importance, but after its reorganization through Colonel Thayer it rose to great prominence. The requirements for admission were and are still very low; they consist in an examination in reading, writing, arithmetic, English grammar, geography, and history of the United States; but the examination for admission and the whole course of four years are conducted in reality with great rigor.

Between the years 1880 and 1888 only 2 per cent of the students were admitted to the Engineer Corps of the United States. Service in this Corps requires an additional study of two years and a half in the United States School for Engineers at Willets Point, Long Island, organized in 1885. The technical instruction in this school comprises twenty-two weeks in civil engineering, ten weeks in military engineering, nineteen weeks in chemistry and photography, and forty weeks in science of explosives and torpedoes.



Since the beginning of the sixties the Military Academy at West Point has lost some of its importance with reference to education of practical civil engineers. The number and importance of engineering schools pure and proper have become very great, and the enormous development of this branch has necessitated a division of labor. The Military Academy at West Point has, in fact, educated for service in civil life only civil engineers. For the education of mechanical engineers this Academy has not contributed much; but, on the other hand, a number of the mechanical engineers have come from the Naval Academy at Annapolis.

This Academy was founded in 1845; it had at first a three-years course of study and three years of actual service on board ship. This service was distributed throughout the course, thus making the course last six years. In 1851 the school was newly organized, with a four-years uninterrupted course, followed by actual service aboard ship. In 1861, at the outbreak of the civil war, the Academy was transferred to the city of Newport; but in 1865 it went back to its old quarters and was subjected to the supervision of the Bureau of Navigation, Navy Department.

According to its present organization the school admits one naval cadet for every Representative in Congress; the cadet must be in age between 15 and 20. The requirements for admission are, like those of the Military Academy, rather low (reading, writing, arithmetic, algebra, grammar, geography, and history of the United States), but the examination is a very severe one. One of the requirements is that the candidate is obliged to serve eight years in the Navy (including the years of study). The course is one of four years at present, and it is well adapted for the education of mechanical engineers; so that it happens quite frequently that the students devote themselves to service in civil life after they have completed their required service in the Navy. For the completion of the study in machine building the mechanical engineers in this school may enter upon an additional course in New York; this course has been arranged in connection with the Naval Arsenal.

A large number of renowned American mechanical engineers are graduates of Annapolis: Francis B. Allen, vice-president of the boiler company at Hartford, Conn.; R. H. Thurston, professor at Sibley College; B. F. Isherwood, the well-known experimenter and marine engineer; B. C. Bampton, director of the Pacific Mail Steamship Company; James T. Boyd, superintendent of the Blake Manufacturing Company, at East Cambridge, Mass.; Charles E. Emery, engineer in New York; David M. Greene, engineer in Troy, formerly president of the Rensselaer Polytechnic Institute; J. C. Kafer, superintendent of the Morgan Iron Works, New York; E. D. Leavitt, engineer at Cambridgeport, Mass.; Charles H. Manning, superintendent of the Amoskeag Manufacturing Company, Manchester, N. H.; Charles D. Bray, professor in Tufts College; A. R. Bush, engineer of the General Electric Company, Boston; M. E. Cooley, professor, University of Michigan; W. F. Durand, professor at Cornell University; I. N. Hollis, professor at Harvard University; A. M. Mattice, engineer with E. D. Leavitt; H. W. Spangler, professor, University of Pennsylvania; O. B. Shallenberger, engineer of the Westinghouse Electric Company, Pittsburgh, Pa.; B. H. Warren, superintendent of the Yale & Towne Manufacturing Company, Stamford, Conn.; Edgar Penney, superintendent of the Frick Company, Waynesboro, Pa.; G. Westinghouse, jr., the inventor of the air brake and president of the various Westinghouse companies; and a great number of other manufacturers, engineers, and railroad directors.

#### OLD ENGINEERING SCHOOLS.

The oldest polytechnical school is the Rensselaer Polytechnic Institute in Troy, N. Y., founded by Stephen Van Rensselaer, in 1824. He erected the buildings and endowed the school with a large land grant. In its charter the term "engineering school" is not mentioned; it only says that the school shall "offer to farmers, mechanics, physicians, lawyers, and merchants opportunity to become practically scientific." At first the institution was confined to experimental courses in the



natural sciences. Four years after the opening the catalogue of the school mentions "engineering" as one of the branches of study.

The original course of study in 1826 contained a preparatory department, with a peculiar method of instruction called the "Rensselaer method," which became typical for America. The instruction was given in the morning in the form of lectures, and in the afternoon it was continued by instructive conversation. The requirements for admission were age (13 to 14 years) and an examination in reading, writing, arithmetic, and English grammar.

The preparatory department had four divisions: (1) Botany and entomology. Occupation: Collections of minerals, plants, and insects. (2) Geography and history. Occupation: In summer, physiology of plants, microscopic investigations; in winter, the making of a globe of plaster of paris. (3) Elements of practical mathematics and moral philosophy. Occupation: In summer, surveying and hydraulic experiments; in winter, the making and using of mechanical tools, measurements. (4) Logic and rhetoric. Occupation: In summer, experiments with gases; in winter, the manufacture and application of electric batteries, galvanometers, magnets, etc. (5) Principles of government and parliamentary usage. Occupation: The manufacture of sundials, thermometers, hygrometers, determining meridians, specific weight, the use of the soldering iron and blowpipe, of cameras, the making of optical pictures by means of lenses, explanation of the microscope and telescope, the application of the laws of reflection and refraction of light by common mirrors and water vessels, and, lastly, the separation of the colored beams of light by means of ice prisms. In all these exercises and occupations the students were allowed to use only tools and apparatus which they had made themselves.

In the school itself the students of engineering were at first taught the natural sciences, to wit, botany (three weeks), zoology (four weeks), geology (three and one-half weeks), chemistry (ten weeks). The real technical instruction embraced knowledge of instruments for survey and physics (eight weeks); geometry, bridge building, railroad and canal construction (eight weeks); hydraulics (four weeks); the application of steam, wind, and electro-magnetism, construction and geology (four weeks).

Up to 1845 only 2 professors and 2 assistants for the science of engineering were employed; in 1849 a professor of chemistry was added; in 1849 the school was thoroughly remodeled and received a foundation which has remained the same till to-day. The Rensselaer Institute has since become one of the best schools for civil engineering. The greatest number of the renowned hydraulic and railroad engineers of America are graduates of this school. Up to 1850 the Rensselaer Institute and the Military Academy at West Point were the only engineering schools of importance. Hence we see that well-arranged instruction in the technical sciences is much younger in America than in Europe, where, at the beginning of our century, technological instruction was offered in France and Germany by means of industrial and trade schools; in Austria by means of polytechnical institutes at Prague and Vienna. During the forties the importance of the engineering arts increased in the United States, and with it the necessity of founding polytechnical schools. The following were founded in quick succession: In 1845 the school of engineering of Union College in Schenectady, N. Y., and the Polytechnical Institute in Brooklyn; in 1846 the Lawrence Scientific School, a department of Harvard University; in 1847 the Sheffield Scientific School of Yale University, founded by Mr. Sheffield, with an endowment of \$1,000,000, at first only nominally an engineering school, but since 1860 remarkably successful; in 1852 the engineering department of the University of Michigan, Ann Arbor.

The large sums which Harvard and Yale universities received for educational purposes are noteworthy; in the foundation of numerous other schools such benefactions were repeated, and they all are significant of American public spirit. In this connection I may mention the fact that the foundation of the University of Michigan

took place at a time (1817) when the State was still a Territory with scarcely 7,000 inhabitants, all simple backwoodsmen. The charter determined the establishment of nine divisions: "General sciences, literature, mathematics, natural sciences, medicine, ethical, historical, intellectual, and military science." The school for mechanical engineering, added in the year 1859, and belonging to the department of science, lay too remote from the centers of industrial activity in the country, and hence never flourished.

In 1851 the Chandler School of Science of Dartmouth College was founded. In 1867 General Thayer added to it the Thayer School of Engineering. With Dartmouth College the New Hampshire College of Agriculture and Mechanic Arts had also been connected. These schools may be considered the forerunners of the polytechnical schools established later, though they themselves did not gain importance till 1860.

Harvard and Yale universities had the most abundant means, professors for many sciences, libraries, etc., but they did not understand the importance of technological education; they never reached the perfection which the Rensselaer Institute in Troy or the military schools attained, and they were soon left in the rear after the establishment of new polytechnical schools. The abundant income of these old universities was used for other branches of study. It is instructive to note the establishment of the Lawrence Scientific School. It may serve as a significant example.

The old Harvard University, which was founded in 1636, in Cambridge, near Boston, was enriched in 1846 by the establishment of the Lawrence Scientific School. It was done by Abbott Lawrence, with a donation of \$100,000 in land. Mr. Lawrence was interested in the hydraulic works in Lawrence, which city had been named after him. The letter proposing the gift is remarkable in many respects, for it determined clearly and distinctly Mr. Lawrence's aim and purpose. It must be remembered that it was done nearly fifty years ago. "Where can we send those who intend to devote themselves to the practical applications of science? How educate our engineers, our miners, machinists, and mechanics?" Now, with regard to these classes of persons he said: "Inventive men laboriously reinvent what has been produced before. Ignorant men fight against the laws of nature with a vain energy, and purchase their experience at great cost. Why should not all these start where their predecessors ended, and not where they began? Education can enable them to do so. The application of science to the useful arts has changed, in the last half century, the condition and relations of the world." The letter suggested that instruction should be given in (1) engineering; (2) mining engineering, including metallurgy; (3) inventing and constructing machinery. All three departments should have a basis of uniform, general study, and only in the latter years of the course should the trifurcation take place. The document contains the explicit recommendation "that the whole income of this school be devoted to the acquisition, illustration, and dissemination of the practical sciences forever."

These principles are indeed the essential purposes of our present polytechnical schools, but at the time Mr. Lawrence uttered them they were new and unheard of, and give evidence of his discrimination and forethought. Further proof of this is: "In addition to these [i. e., the regular professors], it would be necessary to obtain the services, at stated periods, of eminent men from the practical walks of life. The law school is taught by distinguished lawyers of the highest reputation. The medical school by distinguished physicians. In like manner, this school of science should number among its teachers men who have practiced and are practicing the arts they are called to teach." These are remarkable words, not only for the time they were uttered, but for all time to come. Mr. Lawrence was active as a public man from 1847 till 1855, went in 1849 to England as ambassador, and died in 1855.

It appears that Harvard University did not appreciate Lawrence's gift, and used it for other purposes. It is true that at the beginning a professorship of the engineering sciences was established, but in 1855 it was abandoned. In 1842 Louis Agassiz



had come to Cambridge as professor of zoology. There was great enthusiasm about him, and it was determined to secure his services permanently; for this reason the income of the Lawrence School was used for the promotion of zoology and the establishment of a museum of comparative zoology. In consequence of this engineering and other scientific branches were neglected, an experience which other universities, with renowned but one-sided professors, have made also. Harvard University, which, by following Lawrence's advice, might have become the first and best organized technological institution, is not counted to-day among the engineering schools.

The requirements for admission in the Lawrence Scientific School were at the beginning lower than they were for Harvard University; moreover they were quite indefinite; candidates were required to have a good English education, qualified to pursue to advantage the courses prescribed, and to have good moral character.

The second mistake made in carrying out Lawrence's ideas lay in the original course of study, which prescribed exclusively abstract sciences. The decline of the Lawrence School began, therefore, soon after its foundation, and as early as the close of the fifth decade it was quite insignificant. The annual report of 1859 speaks only of purchases for the department of zoology; not a word of the engineering department.

How erroneous the policy of Harvard University, and how correct the views of Lawrence were, is seen from the enormous growth during the sixth decade of purely technological institutions founded in the immediate neighborhood of the Lawrence School with much more modest means. They assumed the leadership, and have remained at the head of the column to this day with great success.

#### THE LAND-GRANT BILL.

The foregoing offers a glance into the origin of American engineering schools up to the beginning of the sixties, though many interesting details have been omitted. In 1862 an entirely changed condition was created by the passage of the famous "land-grant bill." The number of technological institutions increased enormously in consequence of this law, and their present condition is probably only the beginning of a future development of technological instruction in America.

The land-grant bill was brought in by Senator Morrill, of Vermont, during the saddest part of the civil war; it was passed by both Houses of Congress and signed by President Lincoln July 2, 1862. This law prescribed that every State should receive 30,000 acres of land for educational purposes for every Representative in Congress, the land to have no known mineral veins. The land granted to a State should, if possible, lie within its boundaries if sufficient land valued at \$1.25 per acre was still at the disposal of the Government; if not, then the State should receive land in some other State which it was obliged to sell. Possession of land by a State in any other State was expressly forbidden in order to avoid complications of interests.

This latter passage was interpreted by many States as an order for immediate sale and the land thus granted in other States was squandered at low prices in the midst of the civil war. Some States considered it admissible to deed the land over to certain schools for subsequent sale, and only these States have derived the intended benefit from the law. The senseless squandering referred to can only be explained by the excitement prevailing during the war when the future of the Union was questioned.

The law also determined that the income from the sale of this land should be used in every State for the establishment and maintenance of at least one school. Concerning the kind of schools, it was determined "to teach such branches of learning as are related to agriculture and the mechanic arts in order to promote the liberal and practical education of the industrial classes in the several pursuits and professions in life." This provision, however, did not exclude scientific or classical studies.

Each State was obliged to establish such a school within five years from the passage of the law, and every State complied with this provision. Massachusetts founded two schools from the proceeds of the grant, the Institute of Technology



and the Agricultural College; while in New York, Michigan, Vermont, and Connecticut the grant was transferred to existing institutions or universities.

Particulars concerning the history of this grant are found in a publication by the Bureau of Education in Washington, entitled *The History of Federal and State Aid to Higher Education in the United States*; also in a publication of Cornell University, entitled *History of the Agricultural College Land Grant*. The following table, taken from Wellington's report, shows the total proceeds, and the average price per acre in each State is given, together with the names of schools which profited by the proceeds:

States.	Acres.	Selling price.		Institutions for which the proceeds were used.	
		Total.	Per acre.		
<b>New England States:</b>					
Maine .....	210, 000	\$118, 300	\$0. 56	State College of Agriculture and Mechanic Arts.	
New Hampshire .....	150, 000	80, 000	. 53	Do.	
Vermont .....	150, 000	135, 000	. 90	Do.	
Massachusetts .....	390, 000	219, 000	. 56	Massachusetts Agricultural College (two-thirds), and Massachusetts Institute of Technology (one-third).	
Rhode Island .....	120, 000	50, 000	. 41	Brown University.	
Connecticut .....	180, 000	135, 000	. 75	Sheffield Scientific School, Yale.	
Total .....	1, 200, 000	737, 300	. 614		
<b>Middle States:</b>					
New York .....	989, 920	473, 493	. 53	} Cornell University.	
		6, 188, 071	6. 20		
New Jersey .....	210, 000	116, 000	. 55		Rutgers College.
Pennsylvania .....	780, 000	406, 000	. 52		Pennsylvania State College.
Delaware .....	90, 000	83, 000	. 92		Delaware College.
Maryland .....	210, 000	115, 943	. 55	Maryland Agricultural College.	
Total .....	2, 279, 920	7, 382, 417	3. 23		
Without New York .....	1, 290, 000	720, 943	. 559		
<b>Southern States:</b>					
Virginia .....	300, 000	285, 000	. 95	Virginia Agricultural and Mechanical College (two-thirds), and Hampton Institute (one-third).	
West Virginia .....	150, 000	90, 000	. 60	West Virginia University.	
North Carolina .....	270, 000	125, 000	. 46	North Carolina College of Agriculture and Mechanic Arts.	
South Carolina .....	180, 000	191, 800	1. 07	University of South Carolina.	
Georgia .....	270, 000	243, 000	. 90	University of Georgia.	
Florida .....	90, 000	155, 800	1. 73	State Agricultural College.	
Mississippi .....	207, 920	188, 028	. 90	Agricultural and Mechanical College.	
Alabama .....	210, 000	253, 500	1. 06	Alabama Polytechnic Institute.	
Louisiana .....	210, 000	210, 000	1. 00	Tulane University.	
Texas .....	180, 000	200, 000	1. 16	Agricultural and Mechanical College of Texas.	
Tennessee .....	300, 000	403, 500	1. 345	University of Tennessee.	
Kentucky .....	330, 000	200, 000	. 60	University of Kentucky.	
Arkansas .....	150, 000	135, 000	. 90	Arkansas Industrial University.	
Missouri .....	330, 000	170, 000	. 52	University of Missouri.	
Total .....	3, 177, 920	2, 859, 628	. 891		
<b>Northern Central States:</b>					
Ohio .....	630, 000	342, 451	. 54	Ohio State University.	
Indiana .....	390, 000	340, 000	. 87	Purdue University.	
Illinois .....	450, 000	450, 000	1. 00	University of Illinois.	
Michigan .....	240, 000	600, 000	2. 50	University of Michigan.	
Wisconsin .....	240, 000	363, 739	1. 51	University of Wisconsin.	
Iowa .....	240, 000	649, 369	2. 70	Iowa State Agricultural College.	
Minnesota .....	120, 000	526, 838	4. 39	University of Minnesota.	
Kansas .....	90, 000	501, 426	5. 57	Kansas State Agricultural College.	
Nebraska .....	90, 000	39, 505	. 44	University of Nebraska.	
Total .....	2, 490, 000	3, 813, 355	1. 53		
<b>Western States:</b>					
Colorado .....	90, 000	112, 500	1. 25	Colorado Agricultural College.	
Oregon .....	90, 000	93, 985	1. 03	Corvallis College.	
California .....	150, 000	771, 687	5. 14	University of California.	
Nevada .....	90, 000	95, 000	1. 055	Nevada State University.	
Total .....	420, 000	1, 073, 172	2. 56		

Altogether there were 9,567,840 acres, equivalent to \$15,865,872, or an average of \$1.60 per acre.

What small prices the majority of the States obtained from the sale is seen from the foregoing table; only 9 States secured more than the price set by the Government, that is, \$1.25 per acre; 11 States squandered the land for less than one-half the normal price; among these are Pennsylvania (52 cents per acre), New Hampshire (53 cents), New York (53 cents), Ohio (54 cents), Maine (56 cents), Massachusetts (56 cents). New York received altogether about 10 per cent of the entire grant, and nearly one-half of the entire proceeds. This must not be credited to the State, but to Mr. Ezra Cornell. The State of New York had begun to sell its land at very low prices, but then surrendered to Mr. Cornell the further administration and he procured a better result.

If other States had acted likewise, the sum of \$58,000,000 might have been procured instead of only \$9,600,000, or 16 per cent. Nearly \$48,000,000 were lost by want of circumspection and care in the administration of the grant, hence the purpose of this munificent provision for schools, which in the history of education is without parallel, was attained only to a limited extent. In New York a contention arose, because the money was to be divided among several schools. Through the energy of A. D. White and E. Cornell, both State senators, a division of the fund was prevented. Cornell declared that if the entire proceeds of the grant were applied to the support of the new university at Ithaca, he would place half a million dollars of his own at its disposal. This was accepted. Cornell held back the assignment of land until he could procure better prices, and then made new propositions. He guaranteed the State 60 cents per acre, if the land was sold within twenty years, and the surplus was given over to Cornell University. Mr. Cornell died in 1872; his successor, Henry W. Sage, adopted the same policy, and in consequence the university at Ithaca has become one of the richest and best endowed universities in the land—an institution which in many respects may be considered a model of the modern current of education. Its departments of engineering are considered equal in value with all its other departments, and the authorities have given them an ever-growing attention the more the engineering branches increased in importance.

#### MODERN ENGINEERING SCHOOLS.

In consequence of the land-grant bill numerous scientific institutions of learning were either established or greatly improved. The greatest number of them are technological institutions. The number at present can not be definitely stated, since many of them are in quite an undeveloped state. The Bureau of Education mentions, in its report of 1889, 141 scientific schools that offer an education to engineers. Of these many offer at present little or no technological education, but have the intention of establishing that department later. On the other hand, there are real technological institutions in existence not contained in that list of 141 institutions; hence I omit that list and resort to Wellington's tables.

The first list contains all the important institutions of outspoken technological character, giving the year of the establishment and the departments of engineering.

TABLE I.

[C. means "Civil engineering," Ma. means "Machine building" or "Mechanical engineering," Mi. means "Mining engineering," and El. means "Electro-technology."]

No.	Name of institution.	Place.	Date when founded.	Departments.
1	Rensselaer Polytechnic Institute.....	Troy, N. Y.....	1824	C.
2	Harvard University, Lawrence Scientific School.	Cambridge, Mass....	1846	C., El.
3	Yale University, Sheffield Scientific School.	New Haven, Conn....	1847	C., Mi., El.
4	Dartmouth College, Chandler School of Science.	Hanover, N. H.....	1851	C.
5	Union College, school of civil engineering..	Schenectady, N. Y...	1845	C.

TABLE I—Continued.

No.	Name of institution.	Place.	Date when founded.	Departments.
6	University of Michigan, engineering department.	Ann Arbor, Mich....	1852	C., Ma., Mi., El.
7	Polytechnic Institute of Brooklyn.....	Brooklyn, N. Y. ....	1854	C.
8	Pennsylvania Military Academy.....	Chester, Pa. ....	1868	C., Ma.
9	Columbia College, school of mines.....	New York, N. Y. ....	1864	C., Ma., Mi., El.
10	Washington and Lee University, engineering school.	Lexington, Va. ....	1866	C., Mi.
11	Massachusetts Institute of Technology...	Boston, Mass. ....	1865	C., Ma., Mi., El.
12	Lehigh University, engineering department.	Bethlehem, Pa. ....	1866	C., Ma., Mi., El.
13	University of Virginia, engineering department.	Charlottesville, Va...	1863	C., Ma., Mi.
14	Cornell University, college of civil engineering.	Ithaca, N. Y. ....	1868	C.
15	Tufts College, engineering department....	Medford, Mass. ....	1868	C., Ma., El.
16	University of Georgia, school of engineering.	Athens, Ga. ....	1867	C., Ma.
17	Lafayette College, Pardee scientific department.	Easton, Pa. ....	1866	C., Mi.
18	Washington University, polytechnic school	St. Louis, Mo. ....	1870	C., Ma., Mi.
19	University of Vermont, engineering department.	Burlington, Vt. ....	1866	C.
20	Kansas State Agricultural College, mechanical department.	Manhattan, Kans....	1862	Ma.
21	Worcester Polytechnic Institute .....	Worcester, Mass. ....	1868	C., Ma., El.
22	Alabama Polytechnic Institute.....	Auburn, Ala. ....	1872	C., Mi., El.
23	Maine State College of Agriculture and Mechanic Arts.	Orono, Me. ....	1869	C., Ma.
24	Iowa State College of Agriculture and Mechanic Arts.	Ames, Iowa.....	1868	C., Ma., El.
25	University of Pennsylvania, Towne Scientific School.	Philadelphia, Pa....	1872	C., Ma., Mi.
26	Stevens Institute of Technology .....	Hoboken, N. J. ....	1870	Ma.
27	University of Wisconsin, college of mechanics and engineering.	Madison, Wis. ....	1872	C., Ma., Mi., El.
28	Dartmouth College, Thayer School of Civil Engineering.	Hanover, N. H. ....	1867	C.
29	Swarthmore College, engineering department.	Swarthmore, Pa. ....	1869	C.
30	Cornell University, Sibley (mechanical engineering) College.	Ithaca, N. Y. ....	1870	Ma.
31	University of Missouri, school of mines ..	Rolla, Mo. ....	1871	C., Mi.
32	University of California, engineering department.	Berkeley, Cal. ....	1868	C., Ma., Mi.
33	University of Kansas, engineering department.	Lawrence, Kans. ....	1873	C., El.
34	University of Minnesota, college of mechanic arts.	Minneapolis, Minn...	1869	C., Ma., El.
35	Rutgers College, Scientific School.....	New Brunswick, N. J.	1864	C., El.
36	State University of Iowa, department of engineering.	Iowa City, Iowa ....	1873	C., El.
37	Cornell College (Iowa), department of civil engineering.	Mount Vernon, Iowa.	1873	C.
38	University of Illinois, college of civil engineering.	Urbana, Ill. ....	1867	C., Ma., Mi., El.
39	University of Cincinnati, engineering course.	Cincinnati, Ohio ....	1874	C., El.
40	College of New Jersey, J. C. Green School of Science.	Princeton, N. J. ....	1873	C., El.
41	State Agricultural and Mechanical College of Texas.	College Station, Tex.	1871	C., Ma.
42	University of Nebraska, engineering department.	Lincoln, Nebr. ....	1880	C., Ma., El.
43	Colorado State School of Mines.....	Golden, Colo. ....	1874	Ma., Mi.
44	Western University of Pennsylvania, engineering department.	Allegheny, Pa. ....	1879	C., Ma.
45	Pennsylvania State College, engineering department.	State College, Pa. ....	1874	C., Ma., El.
46	Purdue University, schools of engineering.	Lafayette, Ind. ....	1874	C., Ma., Mi., El.
47	Rose Polytechnic Institute.....	Terre Haute, Ind. ....	1874	C., Ma., El.
48	University of Texas, engineering department.	Austin, Tex. ....	1884	C.
49	Michigan Mining School.....	Houghton, Mich. ....	1885	Mi.
50	State Agricultural College of Michigan, mechanical department.	Agricultural College, Mich.	1885	Ma.
51	Georgia School of Technology.....	Atlanta, Ga. ....	1888	C., Ma.
52	Montana School of Mines of College of Minnesota.	Deer Lodge.....	1888	Mi.



All the institutions mentioned in this list, with the exception of the Pennsylvania State College, have received support from the land grant mentioned. Forty-five of them give instruction in civil engineering, 31 in machine building, 23 in electro-technology, 18 in mining engineering. Ten schools offer exclusively civil engineering, 3 exclusively machine building or mechanical engineering, 2 exclusively mining engineering. Schools for electro-technology exclusively do not exist. Forty-one, a majority of the 52 engineering schools enumerated, are departments of universities; only 11 are independent institutions.

Several of the larger engineering schools recently established, for instance the Leland Stanford Junior University, in California, have not been inserted, since their establishment is of too recent date and their technological instruction is yet too insignificant, but I suspect that these younger schools will soon surpass the older ones in the departments of mechanical engineering and electro-technology.

The second list contains the other institutions of learning that have been established by means of the land-grant act. They give instruction of some kind in technology, but have not developed into complete engineering schools.

TABLE II.

State.	Name.	Location.
New Hampshire.....	New Hampshire Agricultural College.....	Hanover.
Massachusetts.....	Massachusetts Agricultural College.....	Amherst.
Rhode Island.....	Brown University.....	Providence.
New York.....	University of the City of New York (science department).	New York.
Do.....	Syracuse University.....	Syracuse.
Pennsylvania.....	Haverford College (science department).....	Haverford College.
Delaware.....	Delaware College (science department).....	Newark.
District of Columbia.	Columbian University (science department, Corcoran Scientific School with engineering department).	Washington, D. C.
Maryland.....	Agricultural College (mechanical engineering department).	Agricultural College.
Do.....	St. John's College (science department).....	Annapolis.
Virginia.....	Military Institute.....	Lexington.
Do.....	Agricultural and Mechanical College (science department).	Blacksburg.
West Virginia.....	University of West Virginia (science department).....	Morgantown.
North Carolina.....	College of Agriculture and Mechanic Arts (mechanical engineering department).	Raleigh.
Do.....	University of North Carolina (science department).....	Chapel Hill.
South Carolina.....	University of South Carolina (science department).....	Columbia.
Georgia.....	Gainesville College (science department).....	Gainesville.
Florida.....	Agricultural College (mechanical engineering department).	Lake City.
Alabama.....	University of Alabama (science department).....	University.
Mississippi.....	Alcorn Agricultural and Mechanical College.....	Alcorn College.
Do.....	Agricultural College (mechanical department).....	Agricultural College.
Texas.....	Austin College (science department).....	Sherman.
Tennessee.....	University of the South (science department).....	Sewanee.
Do.....	University of Tennessee (science department).....	Knoxville.
Do.....	Vanderbilt University (science department).....	Nashville.
Ohio.....	Case School of Applied Science.....	Cleveland.
Do.....	State University (science department).....	Columbus.
Indiana.....	Wabash College (science department).....	Crawfordsville.
Missouri.....	Missouri State University (science department).....	Columbia.
Kansas.....	Campbell University (science department).....	Holton.
Do.....	Ottawa University (science department).....	Ottawa.
North Dakota.....	University of North Dakota (science department).....	Lincoln.
South Dakota.....	Agricultural College of South Dakota (mechanical engineering department).	Brookings.
Do.....	Pierre University (science department).....	Pierre.
Colorado.....	Colorado State Agricultural College (mechanical engineering department).	Fort Collins.
Oregon.....	State Agricultural College (mechanical engineering department).	Corvallis.

[After thus briefly giving a general and historical survey of the growth and extent of American technological schools, the author proceeds to state the purposes and organization of the leading schools, quoting from their catalogues and other publications. Since these may be obtained on application from the several schools, this

part of Professor Riedler's report is here omitted. He then proceeds to show what amount of preparation these schools require, and he does that, as the reader will see, in a very pleasingly graphic manner.]

#### REQUIREMENTS FOR ADMISSION IN AMERICAN TECHNOLOGICAL INSTITUTIONS.

Requirements for admission in the various institutions are as different as the institutions themselves. A general criticism is difficult, because we have to judge by the printed statements of the requirements, while the true standard of criticism would be the degree of severity or laxity in their enforcement.

All institutions require an examination for admission by means of which the different degrees of preparation of the students are equalized. The enforcement of the requirement of examination is not everywhere alike; it is said to be very rigorous in classical universities, but allows even there some gradation and makes possible admission into one of the lower departments of the university. Through the back-doors of various departments almost everyone may get admission to a university; the lower gates simply lead to the preparatory department which is most always found connected with a university. But also the requirements themselves differ greatly in different parts of the country. Schools situated in the Southern or Western States demand less, and of course accomplish less, than others; in most cases their students would not be admitted to renowned schools of engineering.

There is scarcely a difference in the requirements for admission between Harvard, Yale, and Cornell. As a rule the technological schools require no knowledge of ancient languages, except the Sheffield School in Yale. The latter is the only engineering school which allows students to enter at 15 years of age; the majority of schools have fixed the lower limit of age at 16 or 17. A regular student of the Sheffield School can enter Cornell only as a special student (hospitant), since he is not considered able to take part in the regular instruction. The requirements grouped in the accompanying chart are collected from the catalogues of 48 engineering schools; the chart will be more instructive than an extensive description would be (see p. 669).

The chart does not contain those branches which are required exceptionally by a few schools only. For instance, higher demands in French and German are made only by 1 school (Stevens Institute); bookkeeping is required in 1 school (Columbia College); rhetoric in 5 schools. The summary shows that nearly all schools require English and algebra, plane geometry, and American history; other branches, especially natural sciences, are required by comparatively few schools. Renowned institutions like Rensselaer and the military schools require nominally very little, and many another school of little distinction requires much. Several mining engineering schools not contained in the chart do not even require English; one only mathematics; some agricultural schools, not inserted in the chart, require nothing but English.

#### LENGTH OF COURSES.

In almost all engineering schools of the United States the course is one of four years; only 6 schools have one of three years, and 3 schools one of five years; the latter are the University of Pennsylvania, Worcester Polytechnic Institute, and the Polytechnic School of St. Louis. But even these schools graduate their students at the expiration of the fourth year, except that of St. Louis.

The number of weeks in a school year varies between thirty-two and forty; the average is thirty-eight weeks, or a total of one hundred and fifty-two weeks in four years. Schools with shorter courses require work in vacation.

Many schools consider a four-years course too short, hence arrange for post-graduate courses in railroad engineering, technology of hygiene, city waterworks, and architecture. The 6 schools that have a three-years course each may be considered exceptions. They give either no laboratory instruction, like the Sheffield School in Yale, or require a longer preparation, like the Thayer School; or try to equalize the difference by a better utilization of the time devoted to exercises. The control of



## Requirements of admission to technological schools in the United States.

[illegible]



attendance is regular and strict. Although the majority of catalogues contain this passage: "The students are treated as men, not as boys," the term "boys" is generally used for students.

A comparison of the various programmes shows that one lecture or recitation hour is considered equal to three hours in the workshop, two and a half hours in the laboratory, and two hours devoted to drawing. According to this estimate, the average length of instruction is only fifteen to twenty hours per week. Five schools demand twenty to twenty-five hours, four schools more than thirty hours, and three schools thirty-five to thirty-seven hours per week. The ratio of lectures, work in laboratory, drawing, and shopwork to the entire instruction is as follows: 55 per cent lectures, 35 per cent laboratory, 10 per cent drawing and shopwork. The first number increases to 70 per cent in engineering schools which are not well provided with shops and laboratories. The length of the course and the division of time for lectures, laboratory, and shopwork prevailing in some of the noted schools is stated in the following chart:

*Length of course and division of time.*

No.	Schools.	Length of course.			Absolute numbers.						Expressed in percents.					
					Civil engineering.			Mechanical engineering.			Civil engineering.			Mechanical engineering.		
		Years.	Weeks in one year.	Total weeks.	Lectures.	Laboratory and drawing.	Field and shop work.	Lectures.	Laboratory and drawing.	Field and shop work.	Lectures.	Laboratory and drawing.	Field and shop work.	Lectures.	Laboratory and drawing.	Field and shop work.
1	Rensselaer.....	4	40	160	95	65	.....	.....	.....	.....	59	41	.....	.....	.....	.....
2	Harvard.....	4	38	152	78	51	23	.....	.....	.....	52	33	15	.....	.....	.....
3	Yale.....	3	38	114	77	25	12	69	40	5	68	22	10	60	36	4
4	University of Michigan.....	4	36	114	102	30	12	78	39	27	71	21	8	54	27	19
5	Massachusetts Institute of Technology (civil engineering).....	4	34	136	91	32	13	.....	.....	.....	66	24	10	.....	.....	.....
6	Massachusetts Institute of Technology (mechanical engineering).....	4	33	132	.....	.....	.....	67	47	18	.....	.....	.....	51	35	14
7	Lehigh.....	4	38	152	134	11	7	113	27	12	89	7	4	74	18	8
8	Cornell University (civil engineering).....	4	40	160	77	55	28	.....	.....	.....	49	34	17	.....	.....	.....
9	Cornell University (mechanical engineering).....	4	40	160	.....	.....	.....	65	88	7	.....	.....	.....	41	55	4
10	Washington University.....	5	40	200	107	57	36	106	62	32	54	28	18	53	31	16
11	Worcester Polytechnic Institute.....	3½	38	133	68	41	24	49	20	64	51	31	18	37	15	48
12	University of Pennsylvania.....	4	40	160	109	44	7	109	28	23	68	27	5	68	18	14
13	Stevens Institute of Technology.....	4	40	160	.....	.....	.....	76	54	30	.....	.....	.....	47	34	19
14	University of Wisconsin.....	4	37	148	79	49	20	59	62	27	53	33	14	40	42	18
15	University of California.....	4	36	146	75	64	7	68	63	15	51	44	5	47	43	10
16	University of Kansas.....	4	33	132	76	42	14	52	51	29	58	52	10	38	39	22
17	University of Illinois.....	4	36	144	78	56	10	90	41	13	54	39	7	63	28	9

#### ACADEMIC DEGREES.

All American engineering schools confer upon their students academic degrees after the completion of the course, following in this the example of the old universities; quite unimportant schools do the same. The academic title is given either after the completion of the regular course, or upon a dissertation on some technical problem, or, in some cases, after the completion of a post-graduate course of one year in special branches.

According to the report of the Bureau of Education, there are 28 different academic degrees conferred in the United States; among them are 8 in science, 5 in letters,

4 in philosophy, 2 in art, 2 in theology, 3 in medicine, and 2 in laws. The degrees given to engineers are contained among the degrees in science. As early as 1888, 216 schools conferred about 1,600 degrees in science; in 1893 about 200 engineering schools alone conferred over 2,000 degrees upon engineers.

The lowest degree, B. S. (bachelor of science), transferred to the engineering branch is B. M. E., B. C. E., B. E. E.—that is, bachelor of mechanical engineering, civil engineering, and electric engineering. The grade M. S. (master of science), transferred to the engineering branches, is M. E., C. E., E. E., and hence signifies simply engineer in one of the three branches. Aside from these there are a number of subtitles, such as topographical engineer, sanitary engineer, and mining engineer, and finally there are the degrees of doctors of engineering, science doctors, and philosophical doctors. The latter title is borne by many distinguished engineers, although their colleagues express astonishment over the fact.

Degrees are not considered of much importance in America; they are too numerous, and have fallen into discredit because they were conferred by schools of no standing. Vanity has much to do with it. Unbiased observers will not consider the imitation of the ancient title of master of science a very happy one. Wellington says that conferring such a degree is telling a lie, and the lie is not made more respectable because it is told on parchment and signed by the authorities of the school.

The practical importance of academic degrees in America is small, especially for engineers. They have no observable influence upon the schools that grant them. It is different with the old universities, which are influenced very much by the study for academic degrees and the examinations they require. The injurious results of studying for degrees shown in the publication of "Matriculation guides," "Keys to the classics," "History made easy," "Examination Latin grammar," and various "Extracts," begin to play an important rôle in higher education.

With reference to the profession of engineering it may be stated that the academic degrees have nowhere had the only favorable result which academic degrees can have, namely, the elevation of the profession. This result is not possible, owing to the arbitrary way in which they are conferred. The instruction in engineering schools has remained free from the injurious influence resulting from working for examinations and degrees, except in very rare cases.

#### COST OF THE INSTRUCTION.

A good technological education is very expensive, since it can only be given by experienced engineers, who demand high salaries; it requires also very elaborate apparatus and considerable current expenses. The fact that the means of instruction are expensive is the cause of so many engineering schools in America being insufficiently equipped and unable to accomplish what they promise. This is particularly true of numerous schools of recent origin in the West. Such poorly equipped schools teach the engineering sciences in the same way in which they teach literary branches, and frequently we find that one and the same professor teaches mathematics and physics, engineering sciences, and languages; perhaps also manual training. In such schools they teach what can be learned from books. Why not the engineering sciences? Engaging experienced talent and equipping schools with expensive apparatus is not thought necessary, and is often deprecated by the representatives of the classics.

If we take the equipment of Cornell University as typical of a modern American engineering school, it requires, exclusive of mining engineering:

For library and drawing models.....	\$19, 000
For collections, models, etc.....	61, 000
For instruments.....	30, 000
For equipment of chemical laboratory.....	17, 000
For equipment of physical laboratory.....	43, 000
For equipment of experimental station.....	18, 000
For steam-power plant.....	31, 000
For electrical plant.....	5, 000
For workshop equipment.....	19, 000
For astronomical apparatus.....	13, 000
Total.....	256, 000
Annual expenditure for technological instruction.....	44, 500
Annual expenditure for apparatus.....	5, 000
Total annual cost.....	49, 500

It is impossible to conduct the department for a smaller sum than that without crippling it. Professors who understand their business well are very expensive in America, because in practical life a good and sufficient income is always at their disposal. The greatest difficulty in American schools is to secure and hold such men, and the difficulty becomes greater in proportion to the work with which these men are burdened. In Sibley College, Director Thurston alone has to conduct the entire instruction in the senior class, and this is, considering the American mode of teaching and the expensive laboratory work, an enormous amount of work.

As a rule, the teachers have a fixed salary, but they are also dependent upon their share of the tuition fees. In the university at Ann Arbor, Mich., the professors have an average salary of \$2,200, the assistant professors \$1,600, and tutors \$900.

The managers of universities do not like to pay a professor of the engineering sciences any more than they pay to other professors; the consequence of this is that the chairs have been filled with young graduates and that the number of tutors or assistants without experience is exceedingly high in comparison to that of the regular professors, a fact which is certainly not advantageous to the school. Of late the example of medical schools has been imitated; it is that of inducing distinguished specialists to devote a part of their time to lecturing. In large cities the professors of engineering sciences are already, as a rule, engineers who are active outside of the school in practical pursuits. This is advantageous to both parties, provided sufficient time is given for the instruction. The school makes serviceable the practical experience of the professor, and the professor remains abreast with the times and is enabled to test his theories in practical problems. The students gain more confidence in their teachers, and follow their instruction with greater interest.

The enormous expenditures in conducting engineering schools require either a very large number of students or large funds. Most schools depend upon fees, even such schools as those at Troy and Boston. They charge fees as high as \$200 per year. Others charge fees despite sufficient funds, like Cornell University; but in this case it is done to limit the number of students. The technological department of the university (Sibley College) charges \$150, while the classical department is satisfied with a fee of \$75. The Columbia College of Mines in New York also, though in possession of very large means, demands a fee of \$200, the majority of engineering schools \$150 to \$200. However, in some of the best schools instruction is almost free. Most of the schools mentioned before (see list) can not support themselves; every student costs between \$400 and \$500 more than he pays, if the attendance does not go beyond 50 to 70 students. In these cases the generous public spirit mentioned before furnishes the means for the support of the schools.



The fees are very low in all State universities, being between \$10 and \$50. In Lehigh attendance was entirely free of cost up to the year 1891; it is also free in the Leland Stanford Junior University in Palo Alto, in the University of Kansas, Kansas Agricultural College, in the universities of Minnesota, Illinois, Cincinnati, Nebraska, and Alabama, in the Mining School of Colorado, in the Pennsylvania State College, in the Georgia School of Technology, in the State College of Kentucky, and the Virginia Military Institute. But instruction is free in the first three and the last three mentioned only for native or naturalized citizens of the respective States.

The personal expenditures of a student, aside from tuition fees, books and, instruction, vary considerably. They are between \$200 and \$700 per annum. In schools not situated in large cities the average expenditure for maintenance is about \$200 to \$300. The following table will show a comparative summary of the costs of several of the larger schools:

*Fees and personal expenditures.*

No.	School.	Annual fees.	Diploma and graduation fees.	Maintenance (estimated).
1	Rensselaer Polytechnic Institute.....	\$200. 00	\$3. 00	\$300 to \$500
2	Harvard University .....	150. 00	.....	139 to 439
3	Yale University .....	155. 00	10. 00	160 to 640
4	University of Michigan (member of State, \$25; matriculation, \$25+\$10) .....	35. 00	10. 00	303
5	Columbia College.....	205. 00	25. 00	260 to 400
6	Massachusetts Institute of Technology .....	200. 00	.....	240 to 320
7	Cornell (many scholarships).....	100. 00	5. 00	200 to 325
8	Washington University .....	150. 00	5. 00	215 to 330
9	Stevens Institute (for students not living in New Jersey, \$75 more) .....	150. 00	.....	250 to 450
10	Swarthmore (\$100 less for children of Quakers) .....	200. 00	.....	250
11	University of Missouri.....	40. 00	5. 00	130 to 200
12	University of California.....	Free.	.....	150 to 250
13	University of Kansas .....	Free.	5. 00	150
14	University of Illinois .....	Free.	.....	137 to 227
15	Princeton University.....	120. 00	12. 00	171 to 505
16	University of Nebraska.....	Free.	5. 00	150 to 450

Times have changed greatly since the foundation of the first American engineering schools. In 1840 the tuition fee in the Rensselaer School at Troy was \$1.50 for a course of three weeks, and \$1.50 per week for board in the school; no further expenses for the use of laboratories were demanded. In Harvard University the entire annual expenditures of a student, previous to 1848, amounted to \$100; at present they amount to \$500 to \$600. The university itself states the minimum to be \$372, the average to be \$470 to \$620. It must be remembered that the conditions in Harvard University are unusually favorable, and its institutions are imitated in many other schools of science.

The students of Harvard University find in Memorial Hall board and lodging, with three meals a day, for \$4.25 per week; the Foxcroft Club charges between \$2.50 and \$3.50. In Memorial Hall the meals are taken in common. This hall has been founded by a bequest, and contains a large assembly hall, a hall of entertainment, which as a rule serves as a dining hall for from 1,200 to 1,400 students. However, there is no compulsion for students to take part in the public meals. Similar arrangements are found in all the large universities in America, and dwelling rooms are usually connected with them. The prices differ according to location. For wealthy students special dwellings and buildings may be had, and at the great dinner table of Harvard there is, curiously enough, a special part set off for such students.

The salaries of university professors are much better than they are in England, where a few professors draw princely salaries, but where the majority are paid poorly. For instance, the professor of English literature in University College in London has a salary of \$265. Generally speaking, the means at the disposal of

English universities are small in comparison with the American. The State is very economical with its subsidies, and follows the principle laid down by the former chancellor of exchequer, Mr. Goshen: "Nothing for bread and butter, only for sciences that can not support themselves." The annual subsidy paid by the State to the large University College amounts to only \$8,500.

The benefactions of private citizens, with which the American schools are so liberally endowed, are almost entirely wanting in England. A collection had to be taken for the newly opened electrical laboratory of the University College in London, in order to raise the required \$2,500. Industry in England also shows less interest for the technological schools than in America; and it is considered quite a proof of liberality when the managers of a machine factory give a discount of 30 per cent for machines and instruments used for school purposes.

[NOTE.—The author here inserts notes concerning the most essential facts with reference to English engineering schools.]

#### GENERAL REVIEW OF AMERICAN ENGINEERING SCHOOLS.

Owing to the exceedingly large number and varied character of American polytechnical schools, it is impossible to offer a description of their organization and management wholly without criticism and at the same time in a measure complete. The one thing possible has been done in the foregoing; that is, in a description of a number of selected schools the essential features that characterize the instruction and fundamental conception of the objects of technological instruction have been sketched.

[NOTE.—As has been stated, this portion of the report has been omitted in the translation.]

To complete the picture a few general comparative remarks may seem desirable. Regarding the education of engineers in earlier years the following remarks may be added.

The military schools do not serve the profession of civil and mechanical engineering any longer. The times in which mainly knowledge of mathematics, geometry, and geodesy were considered sufficient for the profession of engineers have passed, and to-day there is no engineering school which does not seek its main work in extensive professional instruction.

Nevertheless, the military schools, with the peculiar education and rather limited theoretical and practical instruction for civil and mechanical engineers they offer, are of great importance. We find the proof of this in the great number of distinguished civil engineers who have graduated from such schools. This holds good not only for America, but for other countries. With us the course of education of a Werner-Siemens may induce us to deep reflection.

In face of the present enormous development in exact knowledge of scientific and technical details, the actual result of the study is dependent now as formerly upon simple, natural conception, clearness, and thoroughness, but not upon the extent of knowledge. Military schools in this respect offer many advantages. The most distinguished technological school of France also is a military institution. If a negative advantage of these schools is the prevention of knowing and learning too many things, then the strict formation of character, the reliability and independence gained, must be a positive advantage that can not be gauged too high. Alas, many a modern school esteems that advantage too little.

The preparation of engineers as private students of practical civil engineers deserves the same consideration. This mode of education has become rare; we still find it only in England; but an education obtained in this way is very valuable, and always more profitable and animated than if it had been obtained through books and in schools. The reason has been mentioned before; such students do not obtain the science so much as the art of engineering, and this chiefly through their own reflection. Another reason is that the instruction results from intercourse with



a distinguished experienced engineer, and that, with experience in actual work, a correct conception, practical view, independence, and a feeling of responsibility are developed. And in these, all extensive school education to the contrary notwithstanding, we find the essential character of a true engineering education which facilitates the entrance into practical life—the step which is often so abrupt and disastrous becomes almost unnoticeable.

Real comprehension and an animated activity does not begin for our university students until they have emancipated themselves from what is known as the school tone, have forgotten their school science, and have placed in their stead fruitful suggestions of creating minds and independent action. The intellectual and scientific education of the present schools does not suffice; this is everywhere noticeable in the pitiable condition of persons who, after finishing their school duties, lack guidance and the example of renowned professional men. They run into grooves and the world of productive and creative activity remains closed to them. In America independent action is valued much higher than with us.

It may be remarked here parenthetically that the engineers who have acted as pioneers and smoothed out the road of progress are widely known and highly esteemed in America and England. It is our peculiarity on the other hand to treat with little esteem the works of predecessors in the field of technology; to view with indifference those men upon whose shoulders we have arisen to higher altitudes. The pioneer engineers in Germany are almost unknown to our students, and to the great public they are not known at all. In America and England, also in France, their remembrance is kept alive; it penetrates into the masses of the people and is utilized for ideal purposes of education. Numerous publications glorify and extol the services these men have rendered, while we do not even offer to the younger generation a comprehensive biography of such men; we do not erect literary monuments for them that may be compared with those in American and English literature. A close connection between the historical development of the engineering sciences and the education of engineers is lacking with us altogether.

The older American universities which furnished an education for engineers previous to 1862 have not justified the peculiar object of such an education. Harvard University did not, as stated before, clearly understand the object and importance of an engineer's education, although it had the facilities. Harvard and the old classical Yale University have underestimated their engineering departments from the very beginning; they have lowered the requirements for admission, and introduced into the course of study beside abstract instruction only insignificant professional instruction. They have neglected to follow up the progress of the engineering sciences. Hence their engineering schools have remained insignificant up to late years. Smaller schools have far surpassed them, and of late these old universities have prepared but few engineers.

These old universities meet the demands so little that the actual needs of life created new engineering schools, even previous to the land-grant act. The Massachusetts Institute of Technology and the Stevens Institute in Hoboken prove this. Since the passage of the land-grant act in 1862 the education of engineers has more and more withdrawn from the universities and turned to the independent professional schools, which at present offer that kind of education almost exclusively.

The first consequence of the land-grant act, an act without a parallel, was a rapid waste of the gigantic means offered; the second was the establishment of more than 200 schools, which are chiefly technological—a few of them are agricultural schools. Most of them are poorly equipped and organized without much reflection, yet many of these technological schools had to go through many changes in the course of time, and the majority of them are still in the process of development.

It must be noted that most of the modern schools, which are undoubted technological schools, and have accomplished much as such, were founded as integral parts of universities.



Church influence has played an inferior rôle in the establishment of such schools, while in the establishment of older universities it made itself felt occasionally. As late as 1870 some cases occurred in which denominational influence decided the selection of professors. It is alleged that such influence is still active in Yale University; a similar case is that of the newly founded Chicago University, where church interests (Baptist) play a leading part.<sup>1</sup> Generally speaking, church influence in the schools of America is insignificant at the present time, and for renowned engineering schools it does not exist. Many of the recently established schools expressly exclude denominational teaching and influence.

This is the more noteworthy since the English universities that have served the American as examples show an endless chain of ecclesiastical influence. The disputes in Cambridge and Oxford are well known; the establishment of the free University of London was answered by the establishment of the High Church King's College in London, and that the great University of London now only exists as an examining body and has sunk to the common level of a college is again attributable to church influence.

At present America shows a strong movement for reform which aims at uniting all the engineering schools with the universities, in order thereby to increase the means, as well as to facilitate the instruction, and to connect with it shop and laboratory work, which are the essential characteristics of an American engineering education. After the example of other universities, these engineering schools are to be made of equal value with the schools for intellectual education or general culture and other branches of university education. But at the same time the attempt is made to establish preparatory schools for technological study, which, besides intellectual education, offer instruction for practical life and physical culture.

Features peculiar to all engineering schools are extensive practical training, familiarity with practical views, and the development of the sense for investigation and observation by means of independent exercises in laboratories and workshops. This kind of instruction is carried through on a large scale in the modern technological schools of America, and has had a success which gives us occasion to reflect.

In England attempts have been made to reorganize technological education in the direction intimated, but with the extremely limited means at the disposal of English technological schools scarcely noticeable results have been achieved. Only in electro-technology have England and Germany developed an instruction which resembles that of the American.

Instruction proper, or at least the result of instruction outside of the laboratories—that is to say, the strictly scientific and intellectual education in American technological schools—does not exceed the average of a secondary industrial school in Austria, or the former Prussian schools of a similar kind. The education of students in construction is essentially lower. Instruction in drawing is actually little more than in name. Upon development of those faculties which are necessary for the successful work of construction very insufficient attention is bestowed; hence this side of the American technological education is correspondingly weak.

In America no uniform organization of the course and method of instruction exists. The schools are entirely independent, and possess in some cases very excellent, but in small schools very poor equipment; in many cases schools are dependent upon their limited apparatus and the opinions of the students. The consequence is an extraordinary variety of kinds of schools representing an extended scale of value.

The principles of instruction mentioned before are, however, followed by all engineering schools only so far as their equipment and facilities offer no obstacles.

<sup>1</sup> This university, planned on a grand scale, has been founded by private means, and is under the control of the Baptists. It is intended to make this university the first and foremost of the land, for which reason munificent sums have been placed at its disposal; one of the founders, the New York millionaire, John D. Rockefeller, alone gave it the sum of \$4,500,000. At present the university has faculties of art, literature, and sciences; but the establishment of a superior technological department is planned.

American schools of every kind lack the stimulus of valuable privileges such as we find in Germany, and only few professions are dependent upon a strictly prescribed course of study.

In America the conviction is general that a complete education is not so much gained by instruction as by experience, and for the "school of experience" this American instruction, despite its great breaks and gaps in science and despite its deficiencies, furnishes more talented students than our schools, because American instruction (at least in the best schools) avoids the rock of overloading the brain with too many things, and creating superficiality. The main objects lie in the development of sense of observation, in simple and thorough conception, and in free development of natural talents. And again, the American schools are always inclined to do justice to changed conditions and new needs, and in late years they follow quickly the practical spirit of the nation.

If the American school instruction were animated by better scientific spirit, and if in place of drawing, construction were taught in conformity with higher demands, it would, through its simplicity and naturalness, be far superior to our one-sided intellectual and theoretic education, which seems to extend over too great an area.

Indulging in such comparisons, we must consider that the result of instruction in America is frequently prejudiced by the conditions of life-without, which it is not in the power of the present schools to change. Their most formidable enemy is the tendency toward pecuniary gain; most young people rush out into the world to make money. This tendency injures the value of instruction as much as the diametrical opposite, timidity, injures the value of instruction as a factor of national welfare. Artificially developed timidity in practical pursuits and unlimited conceit in scientific methods are both consequences of learning too many things without reference to the demands of the actual world. These are our obstacles, while the tendency to gain money is the obstacle in America.

Even in American secondary schools we find a great eagerness for independent livelihood. There is a great pressure for admission, but only a small percentage of the students really pursue earnest study; the other and greater part are satisfied to be able to say "I entered college," and then they leave to follow practical pursuits. Universities and professional schools are attended by many students only to the point where a chance invites for pecuniary gain. This is a serious obstacle for the scientific development of higher education, an obstacle which can not be overcome even by exalted aspirations on the part of the institutions and teachers, with model equipment for the pursuit of science at their disposal.

In America it is very essential to observe the extraordinary variety and inequality of preparation offered in schools designed to prepare for the study of engineering. It is not the province of this report to characterize the secondary schools; all I feel called upon to mention is that which refers directly to the education of engineers.

America possesses secondary schools (colleges and high schools) similar to ours; but they make extensive concessions to the practical bent of the nation and the times. They attempt to prepare for the university as well as for practical pursuits; many of them promote in their so-called classical divisions the ancient languages to a limited extent, and besides, in their English division, the modern languages. This latter division and independent schools similarly organized are essentially the normal preparatory schools for technological education. However, it is absolutely impossible to draw a sharp line of distinction.

Furthermore, many universities have a special department in which, by means of instruction in natural sciences and mathematics, a preparation for an engineer's education is offered. Uniform organization is not found in the field of secondary education. The secondary schools of one State vary greatly; only the schools of the same school district exhibit a certain uniformity; the consequence is that many details for comparison are lost, and even the totality of the preparation is difficult to sketch or characterize in a few words.



The secondary schools in America, gauged by their courses of instruction and with our standard of measurement, offer a much lower preparation than ours. The linguistic branches are confined to English and the bare elements of foreign languages; the mathematical preparation does not go beyond quadratic equations, plane geometry, and the elements of trigonometry. But the students bring to their higher studies on an average a clearer conception, better imagination, and much more joy in creative work and independence than with us. This is owing to natural talent, rational education, and less overburdening in pursuit of a one-sided, dry, linguistic study. They are not drilled much, nor are they spoiled by the quantity or the variety of study; they have open eyes, are accustomed to independent observation, and for the little they have learned they possess a very good comprehension. In the secondary schools much care is taken in physical training and out-door sports, which form a great treasure of valuable recollections in afterlife. For our comparison the one circumstance is of importance, that the students leave the secondary institution at the age of 16 or 17, in order to enter the engineering school, hence they bring to them two years of preparatory study less than our graduates of gymnasia.

The gaps in scientific preparation caused thereby, as well as the entire mode of instruction, according to our standard, are very large, and oblige the engineering schools to devote one or two years to preparatory study before the professional study can begin.

Secondary schools without Latin are by far in the majority, and they are the preparatory institutions of engineering schools. The classical schools have no noticeable privileges. Secondary schools without Latin prepare not only for the study of engineering but for every study. Such an education in America lasts from 4 to 6 years. The students enter engineering schools, and consequently also practical life, at a comparatively early age; they waste no time upon the grammar of several languages, and utilize their time in the study of natural sciences and mathematics. The tendency for investigation and observation is fostered in secondary schools more than with us, and it is done in well-equipped laboratories. The enormous economy in this practical tendency and in the shortening of the time of study can not be denied. The talents developed by such instruction, the faculty of representation, the sense of observation, and the tendency for investigation, can not be overestimated, and can never be replaced by the study of languages.

The American secondary schools correspond to the requirements of a natural education, although they are, with reference to quantity of matter studied, below our classical gymnasia; yet, despite the fragmentary instruction preparatory for an engineering education, they furnish most suitable material, since the natural capacities of the students are developed, and since no attempt is made to pump more into the students than they can hold.

The number of American secondary schools is extraordinarily large; the State of New York alone possesses no less than 520 preparatory schools ranking with our gymnasia and Realschulen. The extraordinary variety they exhibit has been sketched in the foregoing remarks.

Many schools have sprung into existence through competition and not in obedience to organic development. Their catalogues are often models of business advertisements; frequently the purpose and object of a school can not be recognized by closely studying its programme. Naturally the number of hybrid institutions is very large. I have chosen my examples from schools that are generally considered good, or from such as have peculiar features.

Recently a strong movement in favor of manual training schools has been noticeable in America. Large funds are expended for them, and even older schools are influenced by the principles they advocate. Schools of a similar bent have been existing in America for some time, but without organic connection with the universities or departments of engineering. A few modern schools of this kind, well-equipped and organized, have given by their success a mighty impulse and a new



direction to the preparatory education for various professions; whether these schools will have a lasting result can not be stated as yet, but because they illustrate the peculiar American idea, a few statements concerning them may seem in place.

Manual training schools are much more than their name signifies. The training in manual dexterity is only one and in fact the smaller part of the instruction they offer. It is only a means for other purposes. Such schools exist in St. Louis, Chicago, Cincinnati, Cambridge, Brooklyn, Philadelphia, Baltimore, Toledo, Cleveland, San Francisco, and in some cities of the South. A great number of them have been established recently and are too young to show results as yet. In most all of these schools students are admitted at the age of 12 to 14 years; they are taught, on an average, daily, four hours in general branches, two hours in shopwork, and one hour in drawing. Besides, two hours per week are devoted to military exercises. It is the purpose of these schools to give, simultaneously and coordinately with intellectual education, a systematically progressive training in practical work and representation. The instruction is to be given in such a way that even in the workshop the main object remains intellectual activity and this leads to the recognition of reality. The systematic course, which is a matter of self-evidence in abstract sciences, is also followed in all practical exercises; that is to say, skill in the use of the hands is not taught for its own sake. Especially the one idea is prevalent, that manual dexterity is proof of a certain direction of intellectual development, and if combined with knowledge of material, forces, and tools it is the foundation of practical judgment.

These schools aim particularly at affording the students an easy selection of a profession after having tested their personal natural capacity. He who has talent for science and practical—that is, natural—comprehension may become an engineer; others may find it more suitable to remain true to mechanical work, and still others may turn to abstract studies. But always the one principle is maintained that intellectual, moral, and practical education are not to be subordinate but simultaneous and coordinate. The latter shall assist both the former, for it is claimed that occupation with practical things and knowledge of things as they are and scientific theoretical education can not oppose one another.

A high moral influence is claimed for systematic practical work, and in this principle lies undoubtedly the common sense which induces the Hohenzollerns to have their young princes taught a trade. In America this occupation with things is much more extended and systematically introduced into the public system of education. We do not possess a similar institution, and our schoolmen do not even think of the possibility that education of intellect and judgment can be obtained in any better way than by studying the ancient languages, or that practical work should find room in the daily programme of a gymnasium. In America this idea has found no appreciation except in schools where the old English models were copied. All schools that sprung up upon American soil and are conducted in the American spirit do not recognize the contrast claimed between practical work and science. In order to characterize this new kind of preparatory schools for the education of engineers I may be permitted to quote a few examples:

*Manual training school in St. Louis.*—The school stands in connection with the Washington University of that city. Its motto is:

"Hail to the skillful, cunning hand!  
Hail to the cultured mind!  
Contending for the world's command,  
Here let them be combined!"

The catalogue of the school informs the parents that the use of tools is taught not for the purpose of teaching trades or training machinists, but that equal care is bestowed upon languages, mathematics, sciences, practical work, and drawing. The school gives a preparation for polytechnical schools, for practical life, and every occupation that requires good discipline of intellect and hand. Its establishment

dates back to 1879. The instruction began in 1880 with 67 students; at present the number of students is 400. The different departments are those of pure mathematics, applied mathematics, natural sciences, languages, drawing, and shopwork.

The shops consist of two carpenter and joiner shops, one forging and welding shop, and one machine shop. Besides these the school possesses a chemical and a physical laboratory, splendidly equipped. The arrangement and equipment of the shops fall in no way below that of the American engineering schools and universities. All that is lacking are the laboratories for special scientific machine investigation, and, of course, the specific professional laboratory equipment of polytechnical schools. The instruction lasts from 9 until half-past 3, with a recess of thirty minutes; two hours are assigned to shopwork, but this is continued after 4 o'clock, voluntarily and very frequently. The first year is devoted to working in wood; the second to forging, welding, and molding; the third to tool making and working in iron. It must be added here that the Washington University has two other preparatory schools, the Smith Academy and the public high school of St. Louis, which are both inferior to the manual training school in their results.<sup>1</sup>

*The manual training school in Cambridge, near Boston*, was established in 1888 and opened in 1892, together with the high school. The school owes its existence to a bequest of Mr. Rindge, who donated \$75,000 and land of equal value; besides he placed at the disposal of the city government \$100,000 for the public library, and \$200,000 for the new city hall.

The course of study is similar to the one followed in St. Louis. For the purpose of physical training extensive military and gymnastic exercises are introduced. The workshops for systematic manual training in wood and iron, molding, welding and forging, etc., are splendidly equipped. The school is a model institution of its kind.<sup>1</sup>

*The manual training school in Chicago* was established in 1883 by the Commercial Club of Chicago. The requirements for admission are: Age, 14 years, and an examination in reading, writing, geography, English, arithmetic, and history of the United States. The tuition fees are between \$80 and \$120 per year. At present it has 15 professors and 300 students. Among the professors there are 1 for drawing, 4 for shopwork, the others for general branches of culture. The shops are particularly well arranged; 48 joiner benches, 24 turning lathes, 2 circular saws, 1 band saw, 1 planing machine, 2 grindstones, etc., are found in the shops. The molding, welding, and forging shops contain 2 molding ovens and 30 forges with accessories. The machine workshop contains 17 lathes, 2 planing machines, 2 borers, and 24 vises, etc. Steam power is furnished for the shops by a Corliss machine of 50 horse-power.<sup>1</sup>

The fact that the old city of Boston contemplates the establishment of a manual training school is significant of the importance of such schools. For centuries this city followed exclusively our, or rather the English, linguistic system of education. In Boston the first Latin school was established in 1635; the English high school (first school without Latin) was opened in 1821; in our day technical education claims attention.

The valuable part of technological instruction in America, laboratory study, corresponds throughout to the same idea which the manual training schools endeavor to express, a combination of intellectual and practical education. In America this mode of education is latterly called briefly "harmonious development," an expression which, as is well known, was used with us for the study of the classics and as a definition of the humanistic tendency.

American harmonious education appeals, first of all, to the perceptive faculty and to the judgment, based upon facts, and seeks the aim of education in "conducting

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<sup>1</sup> The author inserts the course of study of this school, but it is here omitted.



the child into natural and practical life according to the measure of his natural capacities in correct relation to his natural and social environments." The Americans speak of the moral advantages of manual work as something self-evident. For this harmonious education it is claimed especially that it offers the student a more abundant selection for the application of his talents, and that it imbues him with self-confidence and self-esteem by means of visible results of his practical work, thereby creating pleasure and confidence in further pursuit of his studies. This kind of education is considered an intellectual and moral discipline, because manual labor leads to investigation and observation, to the application of judgment, to an accumulation of experiences, and to independent activity, because it makes the pupil see that only his own effort and reflection can lead him to success.

*Conclusion.*—The foregoing statements and descriptions of American schools can not be anything else than the description and characteristics of organization, management, and school appliances. As far as criticism was uttered it was done with the intention of characterizing more briefly and more distinctly the topic of discussion; extensive description was thereby made unnecessary. The actual results of the instruction as a complicated function of the student's natural talent, of the mode of instruction and the spirit with which it is imbued, as well as of things depending upon personal relations, have been excluded from this report.

It can hardly be prevented that the bare facts stated by me will be judged incorrectly; this danger could be avoided only by a critical comparison of American instruction with ours. However, such a comparison is absolutely impossible, since the institutions here and those across the ocean have developed historically amidst very different conditions, and since they are designed to meet different objects and reflect different views. It would be useless to measure the schools of the United States by our standard or judge them by our results.

Without, therefore, entering into a criticism of our own school system, I may be permitted to insert into this report a general statistical comparison of a few European and American schools—one which will make plain to the eye how languages, natural sciences, the mathematical branches, professional study, and laboratory exercises are distributed in the course of study. I am confident that this will be more instructive than an extensive description. For this purpose I resort to a graphic presentation, which is very much shorter and more comprehensive than numerous columns of figures and notes would be.

In the diagrams 1, 2, and 3, the courses of study in German secondary schools are shown. The heading of each shows what class of schools is meant. The whole length of a bar in the diagram represents the total instruction measured by time; the divisions of the line represent the portions of time given to each of the different branches. The figures inserted express this portion in per cents of the total time.

The dark spaces on the left hand (*a*, *b*, *c*) show the measure of time devoted to linguistics; *a* means ancient languages; *b*, modern foreign languages; *c*, the mother tongue, including logic and philosophic introduction, etc.

The spaces marked *B* show the extent of the instruction in mathematics; *C*, in natural sciences; *D*, in the other branches, history, geography, etc., while the spaces marked *E* show the proportion of time in exercises in drawing and similar arts. Instruction in religion, music, and gymnastics, etc., is left out of consideration.

From these diagrams we see that in Austrian and German gymnasia the great bulk of time and attention up to 50 per cent of the total instruction is devoted to the dead languages. The Austrian schools devote the greatest amount of time to the study of the dead languages, yet accomplish less than the Prussian gymnasia, because their course is one of eight instead of nine years. The real gymnasia show a remarkable extension of instruction in modern languages (up to 28.6 per cent) and an equal share of time and attention for the entire instruction in linguistics with that of the gymnasia (up to 55 per cent).

Comparing these with the preparatory schools in America, I present diagrams 5, 6, 7, 8, and 9. I chose schools from Massachusetts because they have, since time imme-



morial, been influenced by classical education, and are still so influenced more than other schools. The graphic representation offered on page 683 needs no special explanation and must speak for itself.

Several secondary schools of America which bear the name Latin schools neglect the natural sciences (C) almost completely, and language instruction is still more extended than in our gymnasia (up to 85 per cent), because a large amount of instruction in modern languages is added (see diagram 5). However, we must consider the fact that the course does not last eight or nine years, as in Austria and Germany, but only six years.

### 1. Gymnasium in Austria.

Year	a	C	B	C	D
1	40	20	15	10	15
2	38	19	14.3	9.6	19
3	50	3.6	13.6	0.7	13.6
4	43.5	13		3.2	17.5
5	47.8	13	17.5	0.7	13
6	47.8	13	13	0.7	17.5
7	39.2	21.8	13	13	13
8	43.5	21.8	8.7	13	13

### 2. Gymnasium in Prussia.

Year	a	C	B	C	D	E
1	36.4	18.2	18.2	9.1	9.1	9.1
2	34.8	13	17.4	8.7	8.7	17.4
3		15.4	11.5	15.4	7.7	15.4
4	46.3	10.8	7.1	10.8	7.1	10.8
5	46.3		7.1	10.8	7.1	10.8
6	46.3	10.8	10.8	14.2	7.1	10.8
7	46.2	17.6	11.6	15.4	7.1	11.6
8	46.2		11.6	15.4		11.6
9	46.2	17.6	11.6	15.4	7.1	11.6

### 3. Realgymnasium in Prussia.

Year	a	C	B	C	D	E
1	36.4	18.2	18.2	9.1	9.1	9.1
2	34.8	13	17.4	8.7	17.4	17.4
3	26	9	14.8	7.4	14.8	7.4
4	14.3	28.6	10.8	7.1	14.3	7.1
5	14.3	28.6	10.8	7.1	14.3	7.1
6	10.8	25	10.8	17.8	10.8	7
7	10.8	25	10.8	17.8	10.8	7
8	10.8	25	10.8	17.8	10.8	7
9	10.8	25	10.8	17.8	10.8	7



## 5. Mass. Roxbury Latin School.

1 Year	a	32.7	c	32.7	B	12.0	C	10.9	E	10.9
2 "	a	25.9	b	25.9	20.7	B	13.8	C	E	10.3
3 "	a	32.1	b	21.4	21.4	B	D	14.3	5.4	
4 "	a		5.0	c	5.0	B	20	D	10	
5 "	a		4.5	b	3.7	C	8.3	B	10	D
6 "	a	40.6	b	6.3	C	17.3	B	17.2	C	26.4

## 6. Mass. Thayer Academy (classical).

1 Year	a 33.3		b 33.3		B 33.4	
2	a 69.6				B 33.4	
3	a 69.6		c 34		D 20	
4	a 25	b 10	B 25		C 25	D 15

## 7. Mass. Phillips Academy (classical).

1 Year	a	37.5	c	2.5	B	37.5			
2	a	62.5	C	2.5	B	2.5			
3	a	35	b	23.5	C	59	B	D	11.7
4	a	47.4	b	5.1	B	21	C	2.1	

## 8. Mass. Thayer Academy (English).

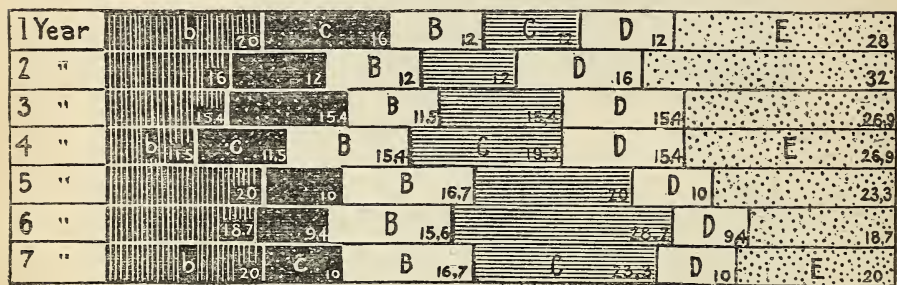
1 Year	a	33.3	b	33.3	B	33.4		
2	a	33.3	C	3.4	B	33.3	D	20
3	b	33.3	C	3.4	E	21.3	D	20
4	b	20	c	26.7	C	14.2	D	39.9

## 9. Mass. Phillips Academy (English).

1 Year	a	25	c	33.4	B	37.5	D	16.6				
2	a	23	b	15.4	B	27	C	15.3	D	19.2		
3	a	18.2	b	18.2	9.1	B	18.2	18.2	D	9.1	E	9
4	a	18.2	b	18.2	C	9.1	B	30.2	C	24.9		

Further facts result from a comparison of the diagrams 1 to 9, namely, the small proportion of the natural sciences in the Prussian gymnasia, and their almost total neglect in the classical schools of America. In order to facilitate the comparison I insert here a diagram showing the distribution of branches in the Austrian secondary schools without Latin (diagram 4). Here we find the natural sciences treated exten-

4. "Realschule" in Austria.



sively, also drawing (spaces E, up to 32 per cent). In Prussian schools of like kind drawing is not treated as well, and in the higher institutions for engineering it is lacking altogether.

Diagrams 10, 11, 12, and 13 represent German technological schools, namely, No. 10 in Austria, 11 in Prussia, 12 and 13 in southern Germany. The dark colored spaces, marked *a*, represent the branches that may be termed, collectively, theoretic preparatory branches, with which the student is usually equipped already when he enters these polytechnica; hence these studies are essentially reviewed.

The spaces marked *b* show the proportion of time given to the theoretical branches that prepare for the real professional study. Physics have been given partly to *a* and partly to *b*.

The spaces marked *c* represent exclusive professional branches; and the dotted portion of these spaces is to show the proportion of time given to practical exercises following the lectures. The spaces marked *d* show the proportion of time given to special professional branches, while the spaces marked *d* represent the practical exercises in shops.

A comparison shows that the German polytechnica devote much time to the review of theoretical preparatory studies (23 to 41 per cent), despite the fact that the preparatory course is one of eight or nine years in secondary schools. It further shows that the real professional instruction consists essentially in a theoretic training, and that the practical exercises, which in America play so great a rôle, are very much neglected in German schools. Thus, for instance, in diagram 10 there is actually only 6 per cent of the time during the third school year given over to practical work in geometry. In diagram 11 we see that only exercises in mechanical technical laboratories are prescribed, amounting to a proportion of 5.6 per cent in the second school year, and 16.8 per cent practical work in electro-technique in the fourth school year. In diagram 12 shopwork is not represented at all, simply because it is not in the course. From this we see the great preponderance of theoretic instruction over practical. Exercises in drawing are given in sufficient proportion only in diagrams 10 and 12 up to 50 per cent, while in the Prussian school, diagram 11, they recede to 21.1 per cent. Compare the dotted part of spaces marked *c* in diagrams 10, 11, and 12.

Diagram 13 exhibits a considerable proportion of laboratory exercises; see black spaces marked *d*. No one will consider this proportion of practical work in the study of electro-technology superfluous, yet in other pursuits it is not considered so necessary.



## 10. Technological University in Austria.

Year	a	b	c	d	e	f
1	2	24.5	16.4	b	58.5	30.7
2	2	10.2	b	44.9	c	44.9
3	b	5	c	68.1	42.4	d
4	c	78.4	4.9	c	21.6	

## 11. Technological University in Prussia.

Year	a	b	c	d	e	f
1	2	28	19	b	46.5	11.6
2	b	39.4	c	5.5	21.1	d
3	b	10.2	c	89.8	15.3	
4	c	35.7	16.2	d	16.8	e

## 12. Technological University in South Germany.

Year	a	b	c	d	e	f
1	2	23	18.1	b	63.5	11.6
2	b	32.7	c	67.3	14.0	
3	b	6.3	c	79.7	37.5	c
4	c	80.4	15.0	c	19.6	6.5

## 13. Technological University in South Germany. Electrotechnology.

Year	a	b	c	d	e	f
1	2	23	18.1	b	63.5	11.6
2	b	24.6	c	62.4	2.6	d
3	b	8.3	c	66.7	16.8	d
4	b	5.1	c	64.2	2.3	d

## 14. Cornell University, Ithaca.

Year	a	b	c	d	e	f
1	2	23	18.1	b	63.5	11.6
2	a	31.4	b	35.2	d	16.7
3	a	10.7	b	33.9	c	17.9
4	c	50	28.2	d	2.6	f

## 15. Institute of Technology, Boston.

Year	a	b	c	d	e	f
1	a	68.7	16	b	7.8	c
2	a	37.5	b	23	c	27
3	a	15.7	b	33.3	c	16
4	b	196	c	30.4	d	14.3

## 16. Sheffield School, Yale University.

Year	a	b	c	d	e	f
1	a	71.8	17.7	b	18	17.7
2	a	36.8	b	47.4	c	10.6
3	a	39.8	b	34.2	c	56

It is plainly seen that the instruction in Continental Europe is defective, in that it does not bestow the amount of time and attention to the practical side which the American technological institutions readily give to it.

In diagram 14 (Cornell University) and diagram 15 (the Massachusetts Institute of Technology) we find the proportion of time given with reference to machine-shop work. In these diagrams we also see the great proportion of time devoted to preparatory instruction, marked *a* (up to 70 per cent), because the secondary schools have only a short course of four to six years, and the polytechnicum has to supply the deficiency. Above all, these diagrams show a very small proportion of oral theoretical instruction (marked *b*), and a very extensive laboratory study and shopwork (marked *f* and *d*). The study in experimental stations, as well as exercises in practical geometry, are marked *d* (up to 26 per cent), while shopwork is marked *f* (up to 32 per cent). Cornell University (diagram 14) has the most extensive exercises of this kind.

Lastly, in diagram 16, a course is sketched which we find in the classical Yale University, so far as it refers to technological instruction. Here the practical exercises have been confined to mere exercises in surveying (marked *d*) in the first year's study (10.2 per cent). All the rest of the course consists of theoretic instruction, and the real professional instruction is insignificant compared with the elementary theoretic instruction.

The foregoing graphic representations offer an opportunity to notice the extraordinary variety found in the proportion of preparatory and real professional instruction.

## CHAPTER VIII.

### HIGHER EDUCATION OF WOMEN IN RUSSIA.<sup>1</sup>

By Prince SERGE WOLKONSKY,

Delegate from the ministry of public instruction in Russia to the Columbian Exposition.

\* \* \* Educational establishments in Russia are not all under the surveillance of the same ministry; eleven different departments have schools, colleges, seminaries, academies, and universities under their direction. This, of course, may appear to many as an impractical state of things, but it has many advantages, the most significant of which is the production of a great variety of types of educational establishments. A brief sketch of the different types of girls' schools, at least the most important ones, must be given before we speak of higher instruction.

Three different departments have the direction of educational establishments for women. These are the department of the institutions of the Empress Marie, the ecclesiastical department, and the ministry of public instruction.

I scarcely need speak of the first one here in Chicago. Anybody can get the most complete idea of it in visiting the department of liberal arts at the Columbian Exposition, where the six hundred educational and charitable establishments of the institutions of Empress Marie are magnificently represented under the surveillance of Mme. Semechkin. The most important educational establishments of this department are the so-called institutes or seminaries for girls, which are under very strict regulations. The boarding pupils, or internats, are only allowed to leave in the summer months, if they desire to return to their parents. The education given is a very accomplished one in so far as preparing the girls as well for intellectual family life as for the laborious life of a governess. These establishments are under the special patronage of Her Majesty the Empress. Ladies of high rank sometimes are called to direct them, and the greatest dignitaries of the State are members of the committee of trustees, which has the higher supervision of all the institutes of the Empire.

The second type of establishments belonging to that department are the gymnasiums and progymnasiums, or high schools for girls. They are of interest because special higher pedagogic classes are attached to some of them. The course in these classes lasts three years, and its object is to prepare the young ladies for a teacher's career. There they get acquainted with different methods of teaching and of transmitting to others the knowledge which they may acquire during the seven years of their school course. The third year is entirely devoted to practical exercises, where the ladies, assisted by professors, give lessons to the pupils of the progymnasium in the following subjects: Sacred history, Russian language, arithmetic, geography, French and German languages. The courses are divided into three groups: The group of Russian language and literature, the group of foreign languages (French and German), and the group of mathematics. Lessons in religion, Russian, old Slavonic, and arithmetic are on the programme of each of the three groups. Ladies who have finished these courses receive a diploma of graduate teacher, conferring upon them the right of occupying the chairs of the above-mentioned subjects in the four lower classes (and of foreign languages in all classes) of gymnasiums and progymnasiums for girls.

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<sup>1</sup>Address delivered at the International Congress of Education in Chicago in July, 1893, and published in the *Independent*, August 3, 1893, pp. 6-7.



Among the establishments of the ecclesiastical department we must mention the diocesan schools for girls. These establishments, the number of pupils in which amounted last year to 13,000, are assigned to daughters of priests and clergy, and prepare them for the rough career of teachers in village schools. For over three years I had the opportunity of closely observing some of these girls at their work, and I must say we can not have enough respect and admiration for the really apostolic mission they fulfill. Buried in some distant village, miles away from railroads, separated from her family, such a young creature undertakes her struggle for life, depending upon a poor and illiterate community which is not always able or willing to pay her the ridiculously small salary that is supposed to recompense her for her work and for her life. For 12 rubles (\$4) a month she has to provide for herself; a peasant's hut, where she finds lodgings for 20 rubles a year, becomes her home; the peasant's family, her only social resource, if there is no priest in the village or no landowner's house in the neighborhood; the rare visits of the educational inspector or of some other member of the district school committee, and the annual arrival in the spring of the examination commission, are the only events that break the monotony of her life in a *milieu* that is not hers, and where she has, in her way, a sort of rank to sustain; for she must not forget that she is not a peasant woman; she has to dress like a lady, she has to behave herself like a lady. I knew one of these teachers who had an invalid mother to support and a little brother whom she prepared for college. Numbers of them are scattered over the surface of our vast country. Their names are unknown. They are not represented at the Fair, and will hardly ever be represented anywhere; but in this country, where an ordinary workman in some distant ranch of your far West is lodged and boarded and gets \$30 a month; in this country, where intellectual labor is recompensed as nowhere else; in this country, which has given such great examples of pioneering and of dissipating darkness; in this country, ladies, I request your respect and your love for these your distant sisters who have no other joy in life than to watch the glimpse of light they gradually transmit to the minds of the little folks whom they aim to teach.

After having paid our tribute to these two important departments we may now pass to the establishments of the ministry of public instruction. We will not go into details regarding secondary education; we only just mention that, according to the report for 1891, the ministry of public instruction had under its direction 342 establishments (gymnasiums and progymnasiums) with 62,529 pupils in them, and we pass on to the special subject under consideration.

The history of the higher educational courses for women is rather eventful, and has passed through various phases. The question first arose in 1869, when permission was given from the ministry of public instruction to organize a series of public lectures in history, philosophy, and science at St. Petersburg and Moscow. The course had no settled plan, nor were any preliminary studies required from the pupils. In the year 1872 Mr. Guerrier, professor in the University of Moscow, opened his college of higher courses for girls, where special attention was given to the study of universal literature and Russian history. At this epoch the necessity of a regular university education for women made itself felt by the great number of girls who went abroad in search of scientific knowledge.

An imperial ukase of the year 1876 authorized the foundation of higher courses on various subjects for women at different universities of Russia; and in the course of the same and the next year such colleges were established at Kazan, St. Petersburg, and Kiev. They were divided into two faculties, the historico-philological and physico-mathematical. The colleges at St. Petersburg and Kiev and those of Professor Guerrier, in Moscow, have a four-years course each; that of Kazan a two-years course. Besides this, special classes of instruction for girls have been attached to the third Moscow gymnasium, with a four-years course of natural science and three years in mathematics. All these establishments were regarded as private institutions, but the board of education was obliged to exert general control over these establishments during each academic year. They had no general regulations, and

the whole organization has for a long time been regarded as a temporary one. Only in 1879 preliminary work in preparing a general regulation for the girls' higher colleges was begun; but it was interrupted by the resignation, in 1880, of Count Tolstoi from his post of minister of public instruction.

In the year 1884, by order of His Imperial Majesty, a committee was created, which was presided over by the under secretary of state, Prince Wolkonsky. Its object was to find out the best means for the organization of superior education for girls in the Empire. But, in the meantime, the admission of new students to the courses was forbidden, and it remained so for a little over two years. In June, 1889, the results elaborated by the above-mentioned commission were put into action, and in September of the same year admission to the courses was renewed.

After this historical sketch let us consider the scientific side of the institution. The course lasts four years, and is divided into two sections: The historico-philological and the mathematical. The following are the lists of the subjects on which lectures are held:

(1) In the historico-philological section: Religion, psychology, logic, history of philosophy, Russian language, old Slavonic, history of Russian literature, ancient and modern theory of literary forms, Slavonic idioms and literature, universal literature (this includes Italian, French, German, and English literatures in their connection with the development of Russian literature), Russian history, history of the peoples of Slavonic race, ancient history, history of modern times, history of arts, Latin language and literature.

(2) In the mathematical section: Religion, general course of mathematics, analytical geometry, algebraical analysis, differential and integral calculus, astronomy, physics, organic and inorganic chemistry, physical geography, and analytical mechanics.

The extensiveness of these programmes does not prevent serious or conscientious study. The pupils obtain very complete knowledge in all branches of the section they select, and at the same time they have the opportunity of trying to solve any special question in its smallest details. In this sense the higher courses include in the limits of their programmes that principle which you formulate so clearly and so aptly when you say that "a man should know everything of something and something of everything."

We have before our eyes the annual reports of the director of the St. Petersburg higher course for women for the last three years; and I take the liberty of communicating to you some details illustrating the scientific level of the young ladies' work. In the year 1891 there were 385 pupils in the four courses, and 298 of these were in the historico-philological and 87 in the mathematical section. This preference for history and literature has always characterized our women, although in mathematics we find quite interesting works on most abstract subjects. Director Koolin quotes in his reports such themes as "An approximate calculus of definite integrals," or "Euler's formulæ of quadrations," and others. In 1890 our celebrated compatriot, Mme. Kovalevsky,<sup>1</sup> who was professor of mathematics at the Uni-

<sup>1</sup> Mme. Sophie Kovalevsky, daughter of General Kronkovsky and descendant of Mattaia Corvin, was born in Moscow in 1850. After her marriage with Vladimir Kovalevsky she studied at Heidelberg University, and in 1870 went to Berlin University. At a later date she received the degree of doctor in philosophy from Göttingen University for a mathematical thesis on the theory of equations. In 1883 Mme. Kovalevsky published an essay on the refraction of light, and was soon after called by Prof. Mittag-Leffler, of Stockholm University, to aid him as docent in his mathematical professorship. Her first course gave her a chair at the university, and led her hearers to place her with Lagrange and Laplace as a poet among mathematicians. In 1886 the Academy of Sciences in Paris proposed, for the Bordin prize, to be decided in 1888, the question, "Perfectionner en un point important la théorie du mouvement d'un corps solide" (On the theory of movement of a solid). The prize was awarded unanimously to Mme. Kovalevsky, whose profound study of the subject placed her in rank with Euler and Lagrange. This thesis, with others relating to the differentials of all determinate functions, placed her in the front rank among mathematicians, and she was fêted in Paris, Hel-singfors, Christiania, and St. Petersburg by the most learned savants. She returned to Stockholm, where she died in February, 1891. (From *Revue des Deux Mondes*, May 15, 1894.)



versity of Stockholm, honored with her presence the examination of the physico-mathematical section, and Director Koolin mentions with satisfaction the good impressions she gathered during her visit. We must note here that the only three ladies who lecture in this establishment are mathematicians. These are Mme. Schiff, who directs the practical exercises in mathematics; Mme. Serdobinsky in physics, and Mme. Bogdanovsky, graduate doctor of the Geneva University, in chemistry.

In the historicophilological section, philosophical questions seem to have mostly interested the young women. Professor Vedensky speaks in the best terms of such works as "On some internal sensations, according to Beannis," "On the constitution of our self-consciousness, according to Taine and Strahoff," "On the principles of knowledge in John Stuart Mill's *Logic*," "On the atomic theory of matter, according to Professor Strahoff," "The universe as a whole," "On the immortality of the soul, according to Plato," and other abstruse subjects.

National history has been much studied, and very minute investigations have been made by women on some original texts of ancient Slavonic chronicles. Such works as "The fall of Novgorod in olden Russian chronicles" and "The conquest of Kazan in 1552 as it appears from annals and traditions," are considered by Professor Platonoff as essays of quite individual and independent value.

Several women are well acquainted with different Slavonic idioms and have made valuable translations of Servian and Bulgarian popular songs into Russian.

I do not wish to fatigue you with minute details concerning the financial status of the establishment, but I can not pass the question by, as I think it is of significant importance in showing how much public opinion is favorably disposed toward higher education for women. The St. Petersburg higher courses are supported by the Government and by the municipality; this sum amounts to 6,000 rubles a year, while the whole maintenance of the establishment, according to the director's report, costs ten times as much. From whence come these funds? Except the students' fees all the rest are voluntary donations of private individuals. We can hardly give an idea of their extent and variety, not only in large amounts of money (such as have been given by Mesdames Sibiriacoff, Shamiansky, Vargounin, and others), but in active help of all kinds, beginning with the architect who erected the building and refused all compensation. During the two transition years, when admission to the courses was refused, most of the professors lectured gratis; the two doctors attached to the establishment, one of whom is a lady, never wanted to accept anything for their daily attendance. Professors, writers, and scientific societies contributed to the enlargement of the library, and the papers have always published gratis all announcements concerning the courses.

Another thing that characterizes the popularity of the courses is the fact that students come from such distant places as Tiflis and Bak<sup>o</sup>, in the Caucasus; or Tomsk, Emissensk, and Irkutsk, in Siberia. It is to be noted, too, that the most generous donors contributing to the prosperity of the establishment are two Siberian ladies.

We must now say a few words in regard to the higher medical courses founded in St. Petersburg in the year 1872. Strange as it may appear here in America, these courses for women were under the direction of the ministry of war and attached to military hospitals. The students from these courses were of great help during the last Turkish war in 1877, where they showed courage and utter self-abnegation. In times of peace women doctors chiefly practice in villages, where the provincial hospitals are often under their direction; in the southeastern provinces their help is priceless among the Mohammedans, because of the strict religious laws that forbid women having any medical attendance from men. Unfortunately, these courses were closed in 1888, chiefly for pecuniary reasons; but at the same time other medical courses attached to the Nativity Hospital of St. Petersburg were reenforced in order to supply this lapse. During the sixteen years of their existence the higher medical courses sent out about 1,000 graduates; the first Russian women doctors were Mesdames Sousloff and Koskevaroff.



## CHAPTER IX.

### PAPERS PREPARED FOR THE WORLD'S LIBRARY CONGRESS.

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#### LIBRARY ECONOMY.

The president of the American Library Association, Mr. Melvil Dewey, in the year of the Columbian Exposition conceived the happy idea of preparing a volume on library economy, assigning the several portions of the work to special experts with the purpose of having the papers thus prepared read at the International Library Congress to be held in Chicago during the summer of 1893. The following letter from Mr. Dewey explains the plan, purpose, and execution of the following papers on library economy, which together constitute a unique and valuable treatise on the general subject of the management of libraries:

While secretary of the American Library Association during its first fifteen years, the need of a manual of library economy was constantly felt, and much of my time was given to correspondence and to preparation and publication of matter destined after revision to form chapters of such a manual. When elected again to the presidency for the World's Fair meeting, I undertook with the approval of the executive board to utilize the unusual opportunity for making such a volume by cooperation.

The following brief extracts from some of the many official circulars sent out will make clear the plan:

"The proceedings of the American Library Association Columbian meeting will form a library handbook to take the place of the Centennial library volume published by the Bureau of Education, which has long been out of print. That did much good, but was written just before modern library activity began. Obviously a much better book can now be written by well organized cooperation among leading members of the association. The historical and statistical parts will be made by the Bureau of Education, which has by far the best facilities for this work, but it is our province to contribute the library economy.

"I hope the experiment of this systematic programme for the World's Fair meeting will be so successful that we may another year take the historical side and make a historical handbook, and a third year take the bibliographic side, putting all our strength on that. This will give the profession three splendid volumes. Bearing this in mind, the writers for this year should avoid going into historical details and make their papers not ordinary essays but a compact and useful judicial summing up of the principles of library economy."

The official programme of the ten days' meeting at Chicago made the following statement:

#### "PLAN OF PROGRAMME.

"The programme is so planned as to make the printed proceedings a handbook of library economy setting forth the points of general agreement attained in the seventeen years since organization at the Centennial, and also the points on which our best thinkers still differ.

"Each author will revise his paper, utilizing the discussions, so that as finally printed in the proceedings it will represent the position of the subject at the close instead of at the beginning of the 1893 meeting.

"The aim is, therefore, to present a judicial digest of previous articles, papers, discussions, and specially of experience, rather than to contribute new material. The substance of perhaps 100 or more contributions scattered through library serials and proceedings, general periodical literature, reports, bulletins, etc., are put in a single short paper, in two parts; the first stating what is generally accepted by well informed librarians, not necessarily what the author thinks; the second giving the points on that subject which are still under discussion and to the solution of which the Columbian meeting ought materially to contribute.

"While the papers will thus be very condensed they are not to be read at the meetings, but will be furnished in advance to members; and the time at the meeting will be devoted to discussing unsettled points which will be presented by the author in a five minutes summary. It is thus expected to get from a single daily session as much practical good as is usually obtained from the three, and in the time thus gained to more than double the great practical value of our annual meeting by thorough study of the library exhibit."

After the meeting the following were among the instructions sent to each author concerning final revision of his chapter:

"The abstract printed in advance in the Library Journal, the full paper as prepared before the meetings, the shorthand reports of discussions, with any information from other sources specially collected for the A. L. A. exhibit, should be used in revising or rewriting the chapter to make it as practically valuable as possible for reference.

"As general editor of the volume, I shall state the plan and opportunities for discussion and revision, but shall not claim approval of the A. L. A. for the published result, as the new constitution forbids promulgating any recommendations in library economy by the A. L. A. without previous approval by the council. Each author is therefore alone responsible for his chapter. You are not restricted to what was submitted at the meeting, but are free to write now what you see fit, provided the rule laid down from the first is followed: that you state not your individual preferences, but the points of agreement and difference among competent librarians with the best statement you can make of different claims. A point of agreement does not mean that a bare majority of those consulted hold this opinion. In all cases where data has been collected the number of votes ought to be noted, at least in brackets or footnotes. On many points our discussions showed us to be practically unanimous, but wherever a respectable minority held different views they are entitled to fair mention in these chapters. We must all guard against assuming the position of an advocate of methods we personally prefer, rather than that of a judge of all those found to have substantial merits. Each author might be described as a World's Fair judge to report on the subject, as other judges report on exhibits. We must not be misled by mere numbers using certain methods, for fifty librarians may be using one form and three another form unknown to the others, but which the entire fifty-three would prefer.

"After a statement of what is being done and approved by competent judges we shall be glad to have each author add his personal views resulting from his study, provided he puts them clearly as such."

This is the plan on which these articles have been prepared. As editor I have had extended correspondence with some of the authors; with others hardly a single note has been exchanged. In some cases footnotes have been added to supply omissions, but the editor has not undertaken to supplement or modify the papers as revised.

In preparing these chapters and in collecting the international library exhibit made by the American Library Association under the auspices of the United States Bureau of Education, many thousand circulars were sent out. The returns, contain-

ing an amount of valuable technical information never before so fully or carefully collected, have all been preserved, classified, bound, and indexed, and, with the library exhibit itself, are fully available to all interested in the library museum of the New York State library school at Albany.

In behalf of library interests the world over, the editor wishes to thank the authors of these articles for the important service they have rendered to librarianship.

From his entrance on his official duties the present Commissioner of Education has shown an interest in and knowledge of modern library aims and methods which has commanded the admiration and cooperation of all interested in developing to its full possibility the great educational agency known as the public library system. The publication of these chapters where they may reach the largest number and do the most good simply adds one more to the long list of official acts which have made his administration marked at home and abroad, wherever educationists keep informed as to the work of government departments.

MELVIL DEWEY.

STATE LIBRARY, *Albany, N. Y., June 15, 1895.*

## LIBRARIES IN RELATION TO SCHOOLS.

HANNAH P. JAMES,

Librarian in Osterhout Free Library, Wilkesbarre, Pa.

**Object to be attained.**—Dr. W. T. Harris in his address at the Fabyan house conference in 1890, on "The function of the library and the school in education," said: "The school gives the preliminary preparation for education, and the library gives the means by which the individual completes and accomplishes his education." These few words embody the sentiments of the typical modern librarian, and his chief aim is so to impress them on the instructors of youth that the schools and the libraries shall work together for one and the same purpose—the true education of man from his earliest years to the close of his earthly career.

**How to begin.**—First, enlist the interest of the superintendent of schools or members of the school board in a close connection between the schools and the library. In New Jersey all libraries organized under the law of 1884 have the superintendent as an ex-officio member of the library board. In other places the superintendent or some of the principals are elected as members. Minneapolis has both the superintendent of schools and the president of the university, and gains greatly thereby in a wise and intelligent administration.

Without these exceptional advantages, however, much depends on enlisting the hearty cooperation of the school board; for while the most intelligent teachers rarely need more than the opportunity to enter into the work, others have to be won over and encouraged by the impelling influence of authority. Their aid, too, is often needed in arranging the details of the work, both in school and out.

**To interest teachers.**—Seek personal intercourse with the teachers and explain to them the value and aim of the work proposed. Visit the schools if possible and make yourself familiar with their work. Invite



the teachers by grades to the library to examine books adapted to their classes. Ask for suggestions of books to buy. Feel a real interest in the teachers and their work, and never be too busy to pass a friendly word with them. One librarian lends pictures mounted on cardboard to teachers who do not at first care for books, and so wins them. Speak at teachers' institutes of your aims, and the great work that can be accomplished by cooperation. Do not rest till every teacher uses the library. The books are quite often of as much value to the teacher as to the pupil. Los Angeles invites teachers to join the library club and finds it most helpful.

**How to aid teachers.**—If possible, have some one specially fitted by training and disposition to take charge of the school work which must fall on the librarian or one of his assistants. If the latter is chosen with special reference to her fitness for aiding and inspiring the teachers, just so much more good will be accomplished. Several libraries have made such appointments, and devote Saturday mornings during term time and two hours every day after school to assisting both teachers and pupils. Lists of books for school use are prepared, sometimes classified, and with notes; written lists of new books received are made, the books themselves being shown. Call numbers are entered in Sargent's, Caller's, Hardy's, Hewins's, and other lists, and lent to the teachers

**Grades allowed use of books.**—From some libraries only the high school is allowed to draw books for school use. More allow high and grammar schools, leaving out the primary school. If our aim is to educate and direct the tastes and habits of thought of the people, the work can not begin too early. Train the twig into a straight and healthy growth, if you wish a straight and healthy tree. As it is estimated that nearly half the pupils leave school at or before reaching the grammar grade, it is necessary to interest them in good books before that time, making them feel that the library has something of value to them, and is as much for them, if they will but use it, as for others. Better results will be obtained in the higher grades by pupils trained in the use of books from the beginning.

**Number of volumes lent.**—From 2 to 40 volumes each are allowed at one time by different libraries, the average number lent by 50 libraries being 7. The number varies somewhat, but not always according to the size of the library. A moderate limit may with advantage be established in the beginning; but later, if an earnest teacher wants and can use a large number to advantage, without detriment to the needs of other teachers, he should have them. Thirty-three libraries report no limit, leaving it to the judgment of the librarian. Milwaukee allows one volume to each pupil.

**Special libraries.**—What are called "special libraries" of 50 volumes each, are in some cities sent to the schools instead of, or in addition to, those lent on school cards. These are retained a specified

time—from four to eight weeks—and exchanged bodily at the expiration of that time with other schools. These “special libraries” often contain duplicates for simultaneous reading, the pupils being required to discuss the books and prepare papers on them. Detroit, Worcester, Milwaukee, Cleveland, Columbus, and other libraries use this method to great advantage. Detroit has 4,000 volumes circulating in this way, 2,000 of them in the high school. New York State appropriates \$25,000 a year for its public library division of the educational extension department,<sup>1</sup> and “traveling libraries” are a central feature in its most efficient practical work.

In outlying districts at a distance from the main library teachers not infrequently act as agents in receiving and delivering the library books to the people of the neighborhood. While this distribution does not come under the head of “school work,” the teacher can, if he will, exert a wise and helpful influence by aiding in the selection of the best books of all classes.

**Duplicates.**—Duplicates ranging in number from 2 to 100 copies are purchased by different libraries. Where all members of a class are required to read the same book for seminars or essays, large duplication is necessary. Such duplication, however, would seem to be more appropriately provided by the school boards, unless school funds are given the library directly for that purpose, as at Los Angeles, where \$5,500 a year are applied to the purchase of schoolbooks.

Where a limited number of books is lent, fewer duplicates and greater variety, unless in special cases, will be found advisable. All classes of the same grade do not use the same books at the same time. For 10 grammar schools 6 copies of any one book are usually enough. Exceptionally valuable books may require more duplicating. Variety excites interest in research and comparison. Buy carefully up to demand, rather than beyond it.

Where a limited treasury will not admit of any duplication, judicious buying, with due regard to school work, and as liberal a use of books on hand as the library can afford, will be of incalculable benefit.

The main point is to teach the children to use the library to the best advantage, to cultivate a real love of books and a thirst for knowledge.

**Fiction.**—Fiction, without decidedly moral or educational tendencies, is seldom allowed. While judicious teachers might often use fiction to good advantage, were it allowed to be freely drawn on school cards, there would be danger of an excessive use of it by others not so judicious. One library reports such use, and the consequent withdrawal of all library privileges. Some use historical fiction freely in connection with historical studies; some, 1 volume of fiction to 8 or 10 others; and many none at all, excepting to lowest primary grades, to incite a desire to use the books and to learn to read. In the latter

<sup>1</sup> By the new law of 1892 it also grants \$55,000 a year for school libraries, to be kept in the building as a part of the school apparatus.



grades the old classic fairy tales are useful in awakening the interest and imagination of those coming from ignorant and degraded homes. Following these, Andrews's *Seven Little Sisters*, Kirby's *Aunt Martha's Corner Cupboard*, with other similar books, will easily lead up to more serious reading.

As a rule, children do not need to be taught to read fiction, but by cultivating in them a taste for history, literature, natural science, etc., we may be reasonably sure that they will choose only the better class of fiction when left to themselves. And as the schools exist at great cost to the public, purely for the education of the young, it would seem to be the obvious duty of the library in its connection with the schools to furnish them only with books of a decidedly educational nature. In the high school grades standard fiction is used with advantage in the study of literature.

**Limit of time allowed and care of books.**—Books are usually lent for a limited period, with privilege of an indefinite number of renewals. Some issue for an unlimited period. By allowing one renewal only fewer duplicates are needed, but in consequence the children can not familiarize themselves so fully with the books. Fewer books thoroughly read are often better for the children than a greater variety with insufficient time for careful perusal. Accounting for books every two or four weeks by the teacher encourages greater care on his part. The work can be delegated to one of the pupils, under the teacher's supervision, or, as in some libraries, the assistant in charge of school work can visit the schools and renew the books, examining their condition at the same time. Torn books should be returned to the library immediately, and lost books reported and paid for by the loser, or by the whole school if the loser is unknown or unable. Responsibility for the careful use of public property is a lesson which can not be learned too early, and children will value books more highly if, in case of loss or damage, they are required to contribute a few pennies apiece to make the loss good. Give them all possible privileges, but teach them to feel a sense of responsibility for those privileges.

**Record of school circulation.**—About half the libraries heard from report no record kept of school circulation, because no special system is used. A ledger account with each teacher is valuable as showing titles of books drawn. Kept in small pass books, and alphabetized by teachers' names, this method is convenient and helpful. Where a charging-slip system is used, colored slips for schoolbooks show at a glance the character, date, and amount of school circulation. By this method warning can be sent teachers, if necessary, in season to prevent fines, but if fines accrue they should be paid. While the total amount of circulation can not show the full value of the work done, it serves as an indication, and on both librarian and teachers it acts as an inspiration and incentive. Special school cards are often used, either placed in book pockets or retained at the library. In the latter



case, teacher's name and date of return are written on the book cover. Teachers are advised to write date of return or renewal on the black-board.

**Influence of library on pupils.**—Some librarians ask for lists of books read by each pupil, with comments on favorites. These lists are returned to the pupils with words of encouragement and advice from the librarian. Some invite children to write notes to them expressing their appreciation and wants. A letter from the librarian commending care and good use of books is greatly valued, and creates a personal feeling of friendship for the library. Better still is the custom of some to visit the schools once a year and talk with the pupils. Classes are invited to visit the library at stated times and are shown objects of natural history or science, if such form a part of it.

These methods, or any others used with a sincere desire to win the children to a love of the library, will have their reward in a great increase of interest among the young. Kindly personal influence is one of the greatest factors of success in this work.

**Reference use by pupils.**—Extensive use for reference is reported by nearly all libraries, some situated near the schools having daily visits from whole classes. Others, according to their ability, afford every possible aid, considering it their most valuable work. As mentioned above, Saturday forenoons and two hours after school daily are in some places devoted to the special assistance of teachers and pupils.

**Class rooms.**—Few libraries have class rooms designed specially for that use, but several report them as future possibilities when new buildings or additions are completed. For class work they are invaluable, as large collections of books can be examined and discussed, a love of research instilled, and a familiarity cultivated that will often lead pupils to prosecute their studies after their school life ends. Worcester has a class room for every subject—history, fine arts, natural science, etc.

**Teachers' cards.**—Teachers are usually allowed to draw extra books for purposes of study, the number varying from two to any number desired, but generally for a limited time. Teachers' cards are issued to all teachers whether residents or not. Books on pedagogy and kindred subjects should be provided and the teachers asked to suggest titles for their own use.

**Teachers' influence on home circulation.**—Some libraries report a decided influence on home circulation from school work, apart from the books lent to pupils from the school. Librarians find teachers the most efficient helpers possible in securing the entrance of good books into families which can in no other way be reached. They are the only ones who can do that work, and they should be encouraged to distribute registration blanks, and help in the selection of books for home reading by short lists or catalogs furnished them for the purpose. They should be impressed with the greatness of their opportunities for good.

ADAPTATION OF LIBRARIES TO CONSTITUENCIES.<sup>1</sup>

By SAMUEL SWETT GREEN,

Public librarian, Worcester, Mass.

A resident of a Massachusetts town to which the Commonwealth was about to give \$100 worth of books came to secure my influence as a member of the State free public library commission to have a large part of the \$100 spent for rare and expensive books on Massachusetts history. As a large and valuable library made up principally of books of that class was soon to be given to another small town in the same county, it would have been manifestly unwise to grant this request. It seems unwise also to place a students' library in a small town where there are few who will use it. It would be better to give the library to a flourishing institution at a county seat, on condition that it shall be open for free consultation by all residents of the county, and that, under proper rules, books may be lent from it to inhabitants of smaller towns for use at home.

In this way the library would be so placed that most persons wishing to make investigations would have the books near home, and the comparatively few investigators in the smaller towns, such as the man in the town first-mentioned, would also have their interests provided for.

The trustees of the Thomas Crane Public Library at Quincy, Mass., have concluded, utilizing the experience of many years, that a working library of 15,000 volumes is sufficient to supply the general wants of the 20,000 residents of the city. It is proposed not to let the library grow beyond 20,000 volumes while the wants of the city remain what they are, and when it exceeds that number of volumes to cut it down by taking out books that never have been needed in a popular library like that in Quincy or that have become useless. It having become evident that an addition would presently have to be made to the building if the recent rate of increase should continue, it seemed best to the trustees to begin at once to reduce the size of the library. They proceeded, under the able leadership of Mr. Charles Francis Adams, to remove from the library large numbers of Government documents,

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<sup>1</sup>With this paper should be read those pages of the Chicago discussions in which it was pointed out by leading librarians that to weed out safely would require much costly expert service; that the most hurtful criticism would be attacks after inevitable cases where some one would greatly wish a book that had been withdrawn as useless; that the printed catalogs already circulated would be made untrustworthy by parting with any volume included; that what one wise and learned man would throw out as trash, another equally wise and learned would consider specially valuable because of differing personal equations. In short, that however excellent in theory, it was perhaps the most difficult thing in librarianship to put successfully in practice.

While few favored "weeding out" simply to gain room by getting rid of books little wanted, many believe in transferring to other libraries which have a distinctly greater need of them.—M. D.



unnecessary duplicates, books of an outgrown ephemeral interest, and those unsuited to the locality. Twenty-one hundred and forty-five volumes were removed immediately. The Quincy library, by adopting this course, relieves itself from very considerable prospective expenses and secures money to use in increasing its usefulness.

Part of the plan is to keep the printed catalogs of the small library up to date and to scatter copies of them widely throughout the city by selling them at a nominal price. It is always expensive to prepare and print a good catalog; it is very expensive to issue new editions frequently. Still, if a popular library is to do its work well it must introduce its constituents to its books by means of frequent revised editions of a good, printed catalog.

The Thomas Crane Library has been famous for the excellence of its annotated catalog and for lists of books on special subjects for the use of school children. It proposes in future to use more money than in the past in making, printing, and keeping up to date good catalogs, and, in order to make it practicable to do so, to keep down the number of volumes in the library, thus reducing the expenses of cataloging, and also to save money in housing its books. That is to say, it is acting on the well-established principle that a small library well cataloged, if at all adapted in the number of its volumes to the size of a town, is of incalculably greater advantage to its constituency than one many times larger but poorly equipped with catalogs.

It is a distinctive feature of the Quincy plan not to make the library a special reference library. That city is very near Boston and Cambridge, which it is well known are richly supplied with large general and numerous special libraries.

When a man appears in Quincy who wishes to make a minute inquiry on some special subject, it is proposed to refer him to the great libraries in the neighboring cities, and to confine the efforts of the trustees of the Quincy library to supplying the general wants of its constituency. Here, then, is a bold attempt at adapting a library to its constituency. Shall it be seconded?

Many will hold it unwise to discuss such a subject publicly. Remembering many ill-judged efforts at economy by ignorant, uneducated, or parsimonious men in town meetings and on library boards, they will pronounce it hurtful to libraries to point out to such men that some library experts consider it well to keep down expenses for cataloging and housing books by weeding out libraries. Perhaps they are right. Whether they are so or not, however, their objection is too late. The matter now under consideration is undergoing public discussion, and it is important that men having special knowledge of library matters should contribute now the results of their experience. Unreasonable men in town meetings and in boards of trustees must be answered, and reasonable men and women need to understand thoroughly the subject in order that their answers may be discriminating and wise.



Once, when the Librarian of Congress asked that an addition be made to the library rooms, a member is said to have urged that instead of enlarging the Capitol, the library should be weeded out. Such a plan would be regarded generally as exceedingly foolish.

There must be in many parts of this broad land large and growing libraries which will aim to gather very large general and special collections not limited to books of intrinsic merit. Such libraries will have to get many books of little value in themselves to enable students to study subjects historically. It would indeed be very silly to weed out the Congressional Library. Somewhere there should be accessible (and where better than in that library?) every book, pamphlet, and map published in the United States. The Congressional Library should be a great national library like the *Bibliothèque Nationale* and the British Museum.

The Quincy plan would not work well even in a place the size of Worcester, Mass., with a population of only 90,000 or 95,000, and but 44 miles from Boston, for it is a center of important educational institutions and of inquirers, and therefore needs large reference libraries. Cambridge, though very much nearer Boston than Quincy, becomes, because of Harvard University, a center where there must be a large library. It is too great an inconvenience for Harvard professors and students to rely, except for book rarities, on libraries even so near as those in Boston.

On the other hand, consider the John Adams Library at Quincy. It was collected by President John Adams in Europe and America, and undoubtedly contains many valuable books. But is it in place in Quincy? It was formerly kept in the Adams Academy, but not proving useful there, it was transferred to the Thomas Crane Public Library, where it now is. Mr. Charles Francis Adams recently said that he only knew of this John Adams Library having been consulted once in forty years, and that then he was himself the consulter. It is more convenient for Mr. Adams to make his many researches in the great libraries in Boston and Cambridge than in Quincy, and his opinion is that this library should be given to the Boston Public Library, where it would be of great value in supplementing the collections, and would be readily accessible to the class of students who would use it. Perhaps, however, Quincy would be unwilling to give up this library, which marks its connection with a very distinguished man. While it is a distinctive feature of the Quincy plan not to make the public library a special reference library, its success depends on having large reference libraries near at hand. In one respect it encourages making the library a special library, namely, on local interests and history. As to the saving in expense possible under the Quincy plan, while money is saved which would ordinarily be used in housing books and in other ways, increased expenditure, it should be remembered, is contemplated in frequent issues of improved catalogs. As I shall soon show, the plan, if well carried out, requires other expenditures.

There are many small libraries which do not need weeding. If a library needs weeding, as many undoubtedly do, will it be weeded out wisely?

Broad-minded intelligence is needful for this kind of work, as well as education and experience in library work. An expert is as much needed in this work of weeding out as in selecting books for a library at its start. Great harm might result from injudicious discarding.

Another objection likely to be made to the Quincy plan is that it would often be difficult to decide how large a library is needed in a town or city, and that this difficulty would be magnified in a growing town. Still, if a thing is desirable it should be done in spite of difficulties. Foresight must be exercised and generous provision made for the probable growth of towns, and the number of volumes changed as changes in the size of population or other considerations demand. Supposing a mistake has been made, the weeding has been made with the accessibility in view of large and special libraries in towns and cities near by. Those towns and cities will still remain near to the town which has grown unexpectedly large; their libraries will still be accessible for reference. The difference between the old state of things and the new is likely to be that the books will be used more under changed circumstances than formerly.

But how provide under the Quincy plan for students who can not afford time and money to frequent the large libraries even in towns or cities near by; and supposing this number of special inquirers becomes considerable, can you hope that they will receive a cordial welcome and sympathetic assistance in large neighboring libraries? Dangers here hinted at must be guarded against. Librarians and trustees should be on the lookout for inquirers and help them to get at the books needed.

It is proposed to help them by preparing and issuing often improved printed catalogs. Personal assistance would also evidently be needed under the new plan. In some cases it would be necessary to buy books. In others the investigator might be introduced to the officers of the library, or by some influential person to the officers of a large neighboring library with reference to his being allowed to borrow if he could not use books on the premises. The same thing might perhaps be better accomplished by a loan from the large to the small library. The small library might have to pay for this privilege. It might be desirable, if an investigator had leisure but not money, for the small library to pay his car fare to the town where the library to be consulted is situated.

Large libraries as now constituted are very obliging, and continually extend courtesies to smaller institutions. The people of Worcester, for example, every week, and sometimes oftener, have books borrowed for their use from the Surgeon-General's library, Washington, from Harvard, the Boston Athenæum, Columbia, Yale, and other libraries. Many institutions are already extending gratuitously such privileges.

Supposing it were to become the custom of small libraries to send books and pamphlets which they can get, but do not need, to large



neighboring libraries where they would be useful. Such action would lead to an exchange of various civilities. Then, too, as the desirability of having large libraries help smaller ones by loans of books becomes more and more obvious, will not persons of means give money to the former to enable them to do this kind of work for small towns generally or for particular towns in which they may be specially interested?

Mr. Adams's advice to libraries is, not to accumulate books promiscuously, but to practice a systematic differentiation in collecting. Books which cumber the shelves of one library may be of the greatest value in another. The public documents only of its own town and State, and a few of the national documents relating to matters of general interest, are in place in the library of a small town. But all public documents have come to be of the greatest service in large libraries and in libraries connected with important educational institutions. Even those which seem driest, because exclusively of statistics, are much in demand in colleges where students of history and political economy are required to examine original sources.

Mr. Charles A. Cutter said several years ago, regarding the proper disposition of pamphlets, that local pamphlets should be given to local libraries, professional or scientific pamphlets to special libraries, miscellaneous and all sorts of pamphlets to larger general libraries. This is excellent advice.

Even large general libraries practice differentiation, many of them excluding professional books and leaving special libraries in their neighborhood to accumulate them. A State library may properly make a specialty of public documents, and perhaps law books, and pay little attention to accumulating other books. A general subscription library with a constituency mainly of people of leisure may find it more useful to collect books in belles-lettres, biography, history, travel, etc., than to buy many dealing with industrial subjects. But a public library in a great manufacturing town, or a special library for architects and engineers, must specialize on technical books.

It is not proposed to destroy books taken out of libraries where they are not needed, but to place them within reach of those most needing them, either through other libraries or auction rooms or secondhand bookstores. No countenance would be given to such a proceeding as that of the administrators of the estate of the well-known collector of old books, Mr. T. O. P. H. Burnham, who are said to have sent a ton or more of material from his stock to the paper mill.<sup>1</sup>

The people of Worcester act more wisely. They empty their attics into the rooms of the American Antiquarian Society or those of the

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<sup>1</sup>It is conceivable that after a lifetime of buying whole attics of rejected books and preserving those which no one would buy at any price, out of an immense stock there might be a ton of duplicate schoolbooks, incomplete volumes, and other books and pamphlets which could not even be given away to any library; since the large libraries would have copies and the smaller ones would not esteem them worth shelf room.—M. D.



local Society of Antiquity. Housekeepers there, too, dispose similarly of such books as turn up in spring cleaning and are found to be in the way. An extensive system of exchange is in operation under the auspices of the former society, and books and pamphlets sent to the rooms of either society, find their way to persons and libraries where they are needed, and the two antiquarian societies enrich their collections by the exchanges made.

Col. Thomas Wentworth Higginson recently stated that a trustee of the Museum of Fine Arts, Boston, told him that he spent a considerable part of his time in refusing gifts offered to the museum. This trustee is probably wise in declining gifts. There are many books and pamphlets offered to libraries which they would not find useful. These should be accepted only on condition that they may be placed wherever they will be most valuable.

Differentiation is specially desirable in the smallest libraries. When but little money is available for buying books the small amount should be spent with closest regard to actual needs of the constituency. Not infrequently intelligent entertainment and elementary instruction will be the principles that should guide in selecting books for small libraries. With intelligent cooperation several small neighboring towns might adopt to advantage the suggestion that each of them spend a few dollars a year on a specialty, such as botany, geology, zoology; every town taking a different specialty and all lending to one another.

This paper favors in the main the selection of books with special reference to the actual existing needs of the users of the library. Such an institution as the flourishing public library of Providence, R. I., might properly, if allowable for any library in cities of moderate size, add to its general work some specialty of limited interest. Mr. Foster, its librarian, has recently stated, however, that he thinks that notwithstanding the reputation which the famous Harris collection of poetry gives to the library throughout the country, it is the best for that library to devote itself almost exclusively to supplying the general needs of Providence.

In conclusion, it may be stated that Mr. Adams does not claim that the plan of weeding out libraries adopted at Quincy has never been thought of before. He was not indebted to any book for the idea, but it had occurred to other persons before. Action upon it had always been recommended. Mr. Adams has taken the bull by the horns. He has put the plan in execution and to a considerable extent has systematized it. He has also called attention to it and made it a living subject for discussion.

## AIDS TO LIBRARY PROGRESS BY THE GOVERNMENT OF THE UNITED STATES.

By A. R. SPOFFORD, LL. D., Librarian of Congress.

Whatever may be the opinion of librarians or of the public as to the adequacy of the service rendered to libraries by our Government, it is at least certain that it has been enough to call for worthy recognition at our hands. While it can by no means be affirmed that the Government has been consistently liberal, it would be equally untrue to assert that it has been consistently niggardly. The Congress of Senators and Representatives, which is alone responsible for the opening and shutting of the national purse strings, is a continually changing body, of brief official tenure. It results that a certain caprice or uncertainty attends the making of appropriations for scientific, educational, and specially for literary objects.

The enlightened and large-minded men whose zeal for the widest diffusion of knowledge through libraries may lead to generous legislation in one Congress may not be reelected to the next.

I will venture to lay it down as a postulate that this Government of the people owes to the libraries of the country all the aids which a due regard for constitutional limitation will allow. Such aids should by no means be confined to libraries at the seat of Government, which may seem to be more peculiarly within its cares. The most obvious and practically useful means of extending such aids is a wider and more complete distribution of all books printed at the expense of the Government. This method, being but a simple extension in the interest of public intelligence of legislation for more than half a century on the statute books, ought also to be more free from cavil and objection than any other. A thoroughly digested system of such enlarged distribution has been often put before the committees of Congress through the aid of this association, and just as often has been rejected, or has failed of passage in one or the other House of Congress. The reasons of these repeated failures, complex as they are, have been fully treated by the members of successive committees of our members in charge of this subject.

In this summary of what has hitherto been done in aid of libraries, complete details can not be given. But I may properly mention some of the more remarkable contributions which have been made to public libraries through the agency of Congress, in the form of publications not emanating from any Department or Bureau of the Government, and hence not constituting documents entering into the ordinary channels of distribution. By far the most costly and extensive publication ever undertaken by the Government was the narrative and the scientific results of the United States Exploring Expedition round the world, in 1838-1842, under the command of Capt. Charles Wilkes. This vast undertaking, though strictly limited to an edition of 100 copies, and

never completed, cost this Government from first to last \$242,460.55. This enormous sum was of course exclusive of any expenses of the expedition itself, and covered—

- (1) The labor of many scientific experts in various fields;
- (2) The finest engravings which the art of that day could supply;
- (3) The choicest paper, of heavy satin finish;
- (4) The hand-press work of the best printers, and
- (5) Binding in the heaviest and most durable of Turkey morocco, full gilt.

Eighteen volumes of text in quarto, and 11 folio atlases of maps and plates were finished up to 1861, when Congress, already more than impatient at the renewed and heavy demands for money to carry on a work of which none could predict the ultimate cost, brought it to a close by refusing further appropriation.

The 100 sets printed were by law distributed thus: 34 copies to foreign Governments; 1 copy to each State in the Union; 6 copies to specially designated institutions or individuals; the remainder to be reserved for future States when admitted to the Union. Repeated fires in printing offices consumed 30 copies of certain volumes before distribution could be made, so that even the meager diffusion of the work to libraries was never fully carried out. Still, it is to the credit of the liberality of Congress to have engaged, in those days of small things and of strict construction, in putting into permanent literary form the scientific results of an exploration which had awakened world-wide interest. The original sin of the undertaking lay in limiting the edition to 100 copies, and sending all the American distribution to libraries at State capitals, and nowhere else. Thus, Albany has a set of this great exploring expedition, while New York City has none. Columbus, Ohio, is endowed with the costly volumes, but Cincinnati scholars can not see them without traveling 100 miles. Jefferson City has a set, laid to sleep under dust year by year, while St. Louis has none. Springfield, Ill., in its State library, has these rare and precious volumes, perhaps never consulted with serious purpose by one visitor in a year, while the great metropolis of studious research, Chicago, can not show a copy of one of the most notable of purely American books. This remarkable history of a Government's doing a very liberal thing in a very niggardly way, adds point to the suggestion that if only 100 more copies had been printed, their distribution would have supplied every library in the United States at that day having 5,000 volumes. This added number would have cost merely the price of paper and presswork—a mere trifle in comparison with the vast sum squandered in diffusing much less than half the benefit.

Besides, the Government might have printed for a much wider distribution the five-volume Narrative of the United States Exploring Expedition, a popular and interesting work, published only by private enterprise. In short, this mismanaged and truncated publication is to



be instanced as a model to be avoided in future undertakings of a similar nature.

Among other notable Government contributions of special value to libraries have been Force's American Archives; or, Documentary History of the American Revolution, the publication of which extended to 9 volumes in folio (1837-1853); the American State Papers, 38 volumes folio (1832-1861); a republication of important Government and Congressional reports and documents, from 1789 to about 1837; Commodore Perry's Narrative of the United States Expedition to Japan, 3 volumes quarto (1856); the Writings of Thomas Jefferson, 9 volumes (1853), 300 sets of which went to libraries and institutions of learning; the Madison Papers, 3 volumes (1840), and his writings in 4 volumes (1865); the Charters and Constitutions of the United States, 2 volumes (1878); and the collection of French documents, entitled "*Découvertes et Établissements des Français dans l'Ouest et dans le Sud de l'Amérique Septentrionale*," 1684-1754, edited by P. Margry and printed at Paris in 6 volumes (1876-1886); and the Annals of Congress; or, Debates and Proceedings of that Body from 1789 to 1824, 42 volumes, octavo, (1834-1836), of which 300 sets were distributed to libraries and other public institutions.

Worthy of our highest recognition is the circulation at Government expense of the extensive work on the Public Libraries of the United States; their History, Condition, and Management, published by the Bureau of Education in 1876. This was followed by a distribution of the second part of the work, Rules for a Dictionary Catalogue, by C. A. Cutter. The Statistics of Public Libraries in the United States, printed by the Bureau of Education in 1886, and about being issued in a new edition to 1893, adds another signally useful publication, widely given to libraries all over the world.

The action of Congress in making books imported for libraries free of duty is another service, which, though long delayed, merits our hearty commendation.

There should be added to this regulation something which our association has long sought but has not seen realized—a greatly reduced rate of postage on library books sent through the mails.

Another service to libraries, both at home and abroad, rendered by our Government, and not so widely known as it should be, is the annual defraying of the cost of foreign exchanges through the Smithsonian Institution. Though the principal credit for this widely useful system by which American libraries may send abroad, and foreign libraries to the United States, books to institutions of learning, is of course due to the Smithsonian Institution and the admirable system established by it, yet Congress has latterly devoted thousands of dollars toward the expenses of the exchange, where before it devoted hundreds. It is to be added that the library of the Government receives the custody and use of the publications annually received as the fruit of exchanges by the Institution of its own publications.

The Government has further benefited the libraries of the country by printing, at its own expense, for years past—

(1) The Proceedings of the National Academy of Sciences, founded in 1863;

(2) Annual Reports of the American Historical Association (since 1889); and

(3) Annual Reports of the Smithsonian Institution, full of valuable scientific papers.

All these enjoy such distribution to public libraries as is provided for regular Congressional documents under existing laws.

Another and more direct aid to libraries by Congress is to be found in the foundation and increase of the various Department and Bureau libraries at the seat of government. The most extensive of these special collections is the library of the Surgeon-General's Bureau at the Army Medical Museum, numbering 104,300 volumes. The elaborate catalog of this collection, the largest assemblage of publications on medicine, surgery, and hygiene in the world, has been printed wholly at Government expense, costing, up to date, for printing and binding about \$174,000, aside from the cost of its preparation.

Beside the national collection in the Library of Congress, the Government has also founded and extended the following Department libraries:

Library of—	Number of volumes.	Library of—	Number of volumes.
Patent Office.....	50,000	United States Naval Observatory....	13,003
Department of State.....	50,000	Light-House Board.....	3,600
War Department.....	30,000	Signal Office United States Army...	10,540
Navy Department.....	24,518	Museum of Hygiene, Navy Depart-	
Treasury Department.....	21,000	ment.....	9,938
Department of Justice.....	21,500	Solicitor of the Treasury.....	7,000
Department of Agriculture.....	20,000	Nautical Almanac Office.....	1,600
Interior Department.....	11,500	United States Hydrographic Office....	3,163
Post-Office Department.....	10,000	United States Fish Commission.....	2,655
Geological Survey.....	30,414	Marine Hospital Bureau.....	1,800
Coast Survey.....	12,000	Executive Mansion.....	2,090
Bureau of Education.....	45,000		
Bureau of Statistics.....	4,200	Total (23 libraries).....	385,431

There are also many minor collections of books in various bureaus. All of these have been built up by Congressional appropriations.

But the most extensive outlay for library purposes by our National Government has been the establishment and constant increase of the Library of Congress, more appropriately designated by Jefferson "the Library of the United States." This name was bestowed on it in his catalog of 1815, when his library, bought by Congress, constituted the entire collection. A more limited designation appears to have been preferred by Congress in that day of small things, before any idea of a national library had dawned on the legislative mind, and has naturally been perpetuated in the statutes. Beginning with the modest appropriation of \$5,000 in 1800 "for the purchase of such books as may be necessary for the use of Congress at the city of Washington," etc.,



the library grew very slowly for half a century, till, in 1851, a fire in the Capitol consumed all but 20,000 volumes of the collection. Congress, with praiseworthy liberality, at once appropriated \$75,000 in one sum for buying books and \$72,500 for rebuilding the interior in solid iron. Up to 1893 the appropriations for books and periodicals have aggregated nearly \$800,000, about \$150,000 of which represents the replacement of books destroyed by two fires.

Another provision of law by which our national library is steadily enriched is the system of international exchanges. Fifty sets of all Congressional and executive documents and other publications of the Government are annually set apart to be furnished to foreign governments in Europe and America. The returns, though fragmentary and incomplete, have brought to the Library of Congress many thousand invaluable accessions, not only of parliamentary and legal publications, but of scientific and literary works.

One principal source of the rapid growth of the library of the United States has been, and will continue to be, the copyright publications, which are deposited therein in pursuance of the law conferring exclusive rights of publication, coupled with the requirement of two copies of each work protected by copyright for permanent deposit at Washington. This law, though very imperfectly complied with prior to 1870 (when the business of keeping all copyright records was transferred to Washington, and has since formed an integral and laborious part of the duties devolved upon the Librarian of Congress), since then has become a most important means of enriching the library. The wisdom of the legislation which established the system is amply attested by the valuable accessions annually accruing; and in view of the fact that the great government libraries of Europe owe so large a proportion of their invaluable stores to the copyright privilege, it is manifest that the law of growth of our own national library is coextensive with the literary and scientific development of the country which it represents. The service rendered to the world of letters by the preservation in a fireproof repository at the seat of government of an approximately complete series of the nation's literature can be best appreciated by librarians, who know by experience how rapidly books tend to disappear from the market, till it is literally true that many works owe to public libraries their sole chance of preservation.

The wise and liberal provision, after years of delay, for a separate library building of the most ample dimensions, of absolutely fireproof materials, and on a plan combining utility and beauty in a high degree, is most creditable to the ultimate judgment and liberality of Congress. The extent of accommodation for books will be 4,500,000 volumes, and the limitation of cost \$6,000,000, to which is to be added the sum paid for the site, \$585,000. Three more years will witness the completion of a library edifice which, for capacity, for convenience, and for architectural beauty, promises to be worthy of the nation and of the age.



## BRANCHES AND DELIVERIES.

By GEORGE WATSON COLE,

Public librarian, Jersey City, N. J.

The success of any library, be it reference or circulating, may be properly measured by the extent of its use. Anything which will help to increase its use, therefore, must tend toward its success. Reference libraries, no less than circulating, may do this by enlarging the number of volumes and making them specially strong in certain lines, thus attracting to their use those interested in them; in other words, by specializing in selection. As the success of a reference library depends on increasing its readers, this can only be brought about by extending as widely as possible information as to its resources.

The public or circulating library must use all these means to secure readers, but is not restricted, as is the reference library, to drawing readers within its portals. Experience has shown that many people who will not go far out of their way to secure books for home reading will use a library if its books can be brought conveniently near to them. The reader needs stimulating, and in order to reach him in towns covering large areas, or having distinct centers of population, several enterprising libraries have established branches or delivery stations, at points sufficiently accessible to overcome this natural inertia inherent in the general reader.

As yet little attention has been paid to this phase of library management either by the American Library Association or in the *Library Journal*. It has therefore been necessary, in order to secure data for an intelligent treatment, to communicate directly with all such libraries as from their size, character, location, or surroundings were judged most likely to have adopted either or both these means of increasing their usefulness.

The list of libraries from which information was asked was carefully selected from the United States Bureau of Education's List of Libraries, 1886; the third report of the Free Public Library Commission of Massachusetts, 1893, and Greenwood's Public Libraries (3d edition, 1890), which named a number of English libraries that had adopted branches.

Certain classes of libraries were omitted, for obvious reasons, such as college and State libraries, and such others as were known to be purely reference libraries.

The following questions were sent:

1. Does your library make use of branches?
2. How many?
3. Number of assistants employed in the respective branches and cost of maintenance?
4. Location and distance of each from main library?
5. Number of volumes in each?
6. Number of volumes added annually to each, and their cost?
7. Are volumes in branches duplicates of those in the main library?
8. Are there reading rooms in the branches?
9. How extensively are they supplied with newspapers and periodicals?
10. What facilities are provided in the line of works of reference, cyclopedias, dictionaries, atlases, etc.?
11. Can patrons of branches draw books from the main library?
12. Is this done directly from the main library, or only through the branches?
13. If in the latter way, how are books transported from main library to the branches?
14. Does your library make use of delivery stations?
15. If so, how many?
16. Location and distance of each from the main library?
17. In what manner and how often are collections and deliveries made?
18. What compensation is made for transportation?
19. What for services of station keepers?
20. Total circulation for the fiscal year ending ——— 189—?
21. Average cost of circulating each volume?
22. What proportion of your entire circulation for home reading is made through the stations?
23. Are there reading rooms in connection with them?
24. If so, expense of maintenance for services and supplies respectively?
25. Do you make use of a combination of branch libraries and delivery stations? If so, please explain their working.
26. From your experience, what changes would you make in your system were you to begin again?

Librarians were also requested to send all information as to their methods, and also add any remarks more fully explaining their different systems.

From about 175 letters sent out, affirmative replies were received from 47. Either from want of statistics or a want of appreciation of the information desired, many replies furnished little of value as to methods pursued and results attained.

Outside of Massachusetts and New York, there is hardly a State of the 14 reporting where more than one library employs either of these aids to circulation.

Of libraries reporting branches, eight report 1 branch, five 2 branches, three 3 branches, two 4 branches, two 5 branches, one 9 branches, one 13 branches, or a total of 67 branches.

Of libraries reporting delivery stations, five report 1 station, three 2 stations, four 3 stations, two 4 stations, two 6 stations, three 10 stations, one 11 stations, one 30 stations, making a total of 114 deliveries.

Of those reporting both branches and delivery stations, one reports 1 branch and 2 delivery stations, one 1 branch and 6 delivery stations, one 4 branches and 4 delivery stations, one 8 branches and 14 delivery stations, giving a total of 14 branches and 26 delivery stations.

Taken by location the reports stand as follows:

	Libraries.	Branches.	Deliver- ies.
California.....	1	0	1
Illinois.....	2	0	33
Indiana.....	1	0	10
Maryland.....	1	5	0
Massachusetts.....	25	25	60
Michigan.....	1	2	0
Minnesota.....	1	4	4
Missouri.....	1	1	0
Nebraska.....	1	0	4
New Hampshire.....	1	0	1
New Jersey.....	1	0	11
New York.....	3	7	10
Ohio.....	1	1	0
Wisconsin.....	1	1	6
England.....	6	35	0
Total.....	47	81	140



A list giving fuller details is herewith appended:

States, etc.	Names, etc.	Branches.	Deliveries.
California:			
San Francisco .....	Mercantile Library Association .....		1
Illinois:			
Chicago .....	Public library .....		30
Monmouth .....	Warren County Library .....		3
Indiana:			
Indianapolis .....	Public library .....		a 10
Maryland:			
Baltimore .....	Enoch Pratt Free Library .....	5	
Massachusetts:			
Abington .....	Public library .....	1	
Agawam .....	Free public library .....	3	
Arlington .....	Robbins Library .....		1
Beverly .....	Public library .....	1	2
Boston .....	do .....	8	14
Brockton .....	do .....	b 2	
Cambridge .....	do .....		6
Dedham .....	do .....		1
Framingham .....	Town library .....		2
Haverhill .....	Public library .....		3
Lanesboro .....	Town library .....	b 1	
Leicester .....	Public library .....	c 3	
Leverett .....	Free public library .....	1	
Lexington .....	Cary Library .....	1	
Newton .....	Free library .....		10
Northampton .....	Public library .....	1	
Norton .....	do .....		1
Quincy .....	Thomas Crane Library .....		4
Revere .....	Public library .....		3
Somerville .....	do .....		2
Templeton .....	Boynton Public Library .....		3
Weymouth .....	Tufts Library .....		6
Windsor .....	Public library .....	2	
Woburn .....	do .....	1	
Wrentham .....	do .....		2
Michigan:			
West Bay City .....	Sage Public Library .....	2	
Minnesota:			
Minneapolis .....	Public library .....	4	4
Missouri:			
St. Louis .....	do .....	1	
Nebraska:			
Omaha .....	do .....		a 4
New Hampshire:			
Concord .....	do .....		1
New Jersey:			
Jersey City .....	Free public library .....		11
New York:			
Brooklyn .....	Brooklyn Library .....		10
New York City .....	Free circulating library .....	5	
Do .....	Mercantile Library .....	2	
Ohio:			
Cleveland .....	Public library .....	1	
Dayton .....	do .....		(d)
Wisconsin:			
Milwaukee .....	do .....	1	6
<i>English libraries.</i>			
Birmingham .....	Free libraries .....	e 9	
Liverpool .....	Free public library .....	3	
Newport .....	do .....	f 2	
Nottingham .....	do .....	13	
Sheffield .....	Public library .....	4	
Swansea .....	do .....	4	

a To be opened October, 1893.

b Branch deliveries.

c Distributing agencies.

d Expect to start delivery stations.

e Two now being built.

f Branch newsrooms.

That more libraries have not adopted branches or delivery stations is because their establishment is an experiment, evolved in the growth of the free public library system.

The libraries in this country, as elsewhere, have passed through several stages, of which this is one of the latest. Where branches or deliveries can be used to advantage the system is destined to come into more general use.

In the first stage of library development more attention was paid to amassing a creditable collection of books than to putting it to a practical and extensive use. The library, looked at from this standpoint, became a mere storehouse where information might be found by a privileged few, provided they knew where to look for it themselves, which was extremely doubtful; or provided the custodian of the collection could put them on the track of the information for which they were in search, which, considering the lack of suitable arrangement and catalogs, was highly improbable. Such collections of books began to be formed in this country contemporaneously with the founding of our older institutions of learning, and to this highly commendable spirit we owe most of our large reference libraries, of which the college and State libraries, and those of historical and other societies, having for their particular aim the collecting of books on special subjects are excellent types. The primary aim of these libraries was to meet the needs of a restricted class—scholars and students of special subjects—rather than to cater to the intellectual requirements of the general public.

The second period or stage of library development was begun when attention was first called to organizing public libraries about forty years since. It was the leading principle of the originators of this class of libraries that much might be done for the cause of education and for the entertainment of the general public by libraries having for their primary aim the circulation of books for home reading. As the people were to be beneficiaries it was but another step in this movement to decide that these libraries should be established and maintained at the expense of those for whose benefit they had been called into being. Thus rose the laws for the founding and maintenance of public libraries by taxation.

In this country the Boston Public Library stands foremost as a type of this class, and its history is the history of the free public library movement which forty years ago began to stir not only this country but England. Following, as it did, the first stage of library development, its promoters naturally adhered strongly to the ideas which had prevailed respecting the functions of a library down to that time. We therefore see in its Bates Hall the great importance attached to its reference department.

The free public library idea spread rapidly in New England, and especially in Massachusetts, till now no town or city government is considered to have performed its duty to its citizens unless it has provided them with a tax-supported public library.

So great are the advantages which have risen from founding public libraries that the policy has rapidly spread throughout the country, and to-day we see libraries springing up in nearly every town and city where they have not heretofore been established. This impulse has been greatly accelerated by the wide-reaching work of the American Library Association since its formation in 1876, and its active career

has doubtless done more to advance the cause of the free public library movement in this country than all other causes combined.

Those having the management and care of our public libraries at heart have come to realize that the mere fact that a town or city has a well-equipped library, from which the public are free to draw books for home reading, does not necessarily mean that all the requirements for its most successful operation are fulfilled. A prominent librarian has well said that the time has come when it is as unreasonable to require the people of a large town or city to depend on a single library from which alone they can draw their books as it is to require them to buy all their groceries or meat at one store or market, or that they shall all attend the same church.

This spirit has brought about the third stage of library development in which its promoters aim to carry the library and its benign influences to the very doors of the people. This stage is one of recent growth; it might perhaps be more accurate to say it is even now in its formative period, for outside one or two leading libraries, branches and delivery stations are creations of the last few years, and are even yet in their experimental state, though in nearly every case yielding surprisingly gratifying results.

No reference was made to this phase of library effort in the 1876 report on public libraries, exhaustive as was that document, and we look in vain for much light on this subject in the *Library Journal*, which contains the fullest history of the libraries of this country that can elsewhere be found.

While it is generally admitted that in towns or cities of large area or having distinct centers of population the benefits of branches or delivery stations are great, there is difference of opinion as to which is better. In many places the difference in expense settles the question of itself, as delivery stations can be successfully carried on at a far less cost than branches. It may be questioned whether, in cases where funds permit a choice, it is good policy to use public money in building up a series of branches, which are largely counterparts of each other and of the main library; thus scattering funds in forming several small libraries, rather than in building up a strong central library.

Branches and delivery stations are managed in various ways:

**1. Delivery stations.**—We find the delivery station pure and simple, where books are collected and sent to the main library, and are there exchanged for new ones which are returned to the station where the borrowers get them. All accounts are kept at the library, the station being only a conduit through which books are sent and received.

The library reporting the largest number of delivery stations, without other appendages, such as reading rooms or reference libraries, is the Jersey City Free Public Library. This library first opened 7 stations, October 1, 1891. Their number has since been increased till



now 11 are in successful operation. They are located from 1 to 4 miles from the library. Collections are made in the morning, and deliveries in the afternoon of the same day by a hired delivery wagon. About \$2,000 a year is now paid for transportation. The station keepers are paid one-third of a cent for each volume, or borrower's card, returned to the library. The total circulation for the year ending November 30, 1892, was 172,225 volumes, or 49.9 per cent of the total circulation for home reading. The total cost of maintaining these branches was \$2,230.54, an average of nearly 1.3 cents a volume.

**2. Distributing agencies.**—The plan suggested by the New Hampshire board of library commissioners uses what may be called distributing agencies, in distinction from delivery stations. Enough books to meet requirements are sent to these agencies at stated intervals, say of one, three, or six months. For the time being these form the stock of the agency, and are distributed to borrowers and returned to be circulated again and again, till they are replaced by a new supply from the main library. While they are at the agency all accounts with the borrower are kept there independently of the main library.

The first report says:

One of the most troublesome questions arising in many towns whenever the establishment of a library is advocated is that of location. Local jealousies are stirred up afresh and sometimes with the result of hindering the establishment of a library. In several cases, where there were two or more villages in a town there has been a disposition to establish an independent library in each village. It has been the policy of our board to recommend the establishment of one central library, and then, if it was found necessary to have some better facilities for the distribution of books, that distributing agencies be established as might be convenient. In this way all records could be kept at the central library, and whenever books were transferred to the agency the same could be charged and then credited when returned.

The manifest advantage of such a system is that the library accounts could be more accurately kept than if the libraries were more or less independent; and, again, the exact location of every book could at any time be ascertained at the central library (p. 11, 12).

Then follow resolutions and rules relating to their operation.

One small library only, the Leicester (Mass.) Public Library, reports this plan in operation. It originated at that place in 1869, and there are four agencies, which have been in operation ever since. These agencies are not strictly such as are planned by the New Hampshire commission, inasmuch as it is reported that they have "a very few permanent volumes." The town numbers 3,000 inhabitants, and the total annual income for library purposes is but \$480. About 60 volumes are sent quarterly to each of its four agencies. This interesting case shows what can be done in small towns with limited incomes.

The public library at Cleveland, Ohio, and also that at Milwaukee, Wis., is successfully carrying on a similar work, but uses schools instead of agencies as distributing points. A full account of the working of this plan is given by W. H. Brett, librarian of Cleveland, in a paper on "The relations of the public library to the public schools," read by him

before the department of superintendence of the National Educational Association, held in Brooklyn, N. Y., February, 1892. This paper is printed in full in the proceedings, and has been separately reprinted.

**3. Delivery stations with reading rooms.**—Probably the best, and certainly the largest, example of delivery stations, at which are reading rooms and a small library containing only books of reference, is that of the Chicago Public Library. This library has 30 delivery stations, located at from 1 to 7 miles from the library. Collections and deliveries are made the same day by four delivery wagons, each of which is paid \$1,350 a year. The station keepers are paid \$10 a month for 500 volumes or less; \$2 a hundred from 500 to 1,000 volumes, and \$1 for each 100 volumes over 1,000. The total circulation through the delivery stations during the year ending May 31, 1893, was 422,812 volumes, or about 43 per cent of the entire circulation, the average cost of circulating each volume being about 2.87 cents.

At six of these branches are reading rooms, each containing a file of from 80 to 100 periodicals, and from 500 to 1,500 volumes for reference use only. These were maintained in 1892-93 at a total expense of \$12,114.51.

**4. Branch libraries.**—We find branch libraries pure and simple, or those that circulate their books independently of the main library, but which report to it, and whose borrowers are permitted to use it whenever they wish to do so.

The best example of this class is the Enoch Pratt Library, of Baltimore. This library was started in 1886 with four branch libraries, costing \$50,000; a fifth has since been added.

These branch libraries are in different quarters of the city, from 2 to 4 miles distant from the central library. They are stocked with 45,363 volumes, or more than half as many as are in the main library at Mulberry street, which contains 77,410 volumes. These branches therefore represent an expenditure of not far from \$100,000. Two assistants and a janitor are employed in each branch at an annual cost of \$840. The buildings will hold about 15,000 volumes each, but it is proposed to limit the number to 10,000. This limit has already been nearly reached. The reading rooms are supplied with from 20 to 30 current periodicals, but newspapers are not taken. A few reference works are also provided in each.

During the year ending January 1, 1893, there were circulated from these branches 184,500 volumes, or a little over 40 per cent of the entire circulation of the library, which was 452,733 volumes. A comparison of the average expense of circulating each volume would be interesting, but want of sufficient data prevents this being given.

The librarian, Bernard C. Steiner, believes in delivery to branches, and intends to introduce it, in which case he would probably buy fewer books directly for the branches, thus keeping the number of volumes in the branch libraries within the proposed limits.

**5. Combined branch libraries and delivery stations.**—The most prominent of the few examples of this combined system is the Boston Public Library. It carries on 8 branches and 14 deliveries. There are in these branches 139,281 volumes, ranging from 32,410 in the Roxbury branch to 11,192 in the South End branch. In these branches 42 persons are employed as librarians and assistants. In their reading rooms the best monthly and weekly illustrated papers are supplied, and each branch is provided with good cyclopedias, dictionaries, and other works of reference. Fourteen delivery stations are conducted in connection with the main library and its branches. Deliveries are made not only to the delivery stations, but also to the branches, in strong boxes, sent out daily by express. The station keepers are paid \$250 a year for services, rent, and light. In some of the deliveries are reading rooms. During 1892, there were distributed through the branches and deliveries 479,632 volumes (if we read the report correctly) out of a total circulation for home reading of 719,063.

In this case the establishment of branch libraries was not undertaken till after the main library had amassed a collection of over 150,000 volumes, thus having a strong central library with which to begin its extending work. The gradual growth of the city by the annexation of its various suburbs gave it an opportunity of bringing under its management the various libraries which had previously been independent. This was of great advantage to the smaller libraries, as practically they added to their own resources those of the public library, which was many times their size.

Unless the parent library is already firmly established and has a large and strong collection of its own, with abundant financial support to carry it on successfully, as in this case, it may not be wise to scatter its funds in forming branches. No city seems better adapted by geographic conformation and various centers of population for carrying on successfully a system of branches and delivery stations than Boston, yet the librarian, T. F. Dwight, thinks that were the work to be begun anew he would employ delivery stations only.

Other means of increasing the usefulness of libraries, of an analogous nature, are carried on by many libraries, such as the departmental libraries in colleges and universities. There is, however, this distinction, the departmental library is the setting aside in a convenient location of books relating to a special subject or group of subjects for use by those making special studies in those subjects, e. g., chemical books in a laboratory, botanical works in an herbarium, or books on political economy in its class room. This does not contemplate that the books shall be duplicated in the main library; it is rather a practical sequestration to make them more useful or convenient to those specially interested in them.

Branch libraries, on the contrary, while not actually contemplating a duplication of the central library, really become so to a very great extent.



Another means of creating interest in books and their use is illustrated by the traveling libraries now sent out from the State library in Albany to different parts of New York. This method is analogous to the distributing agencies recommended by the New Hampshire State library commission, but has a larger area of usefulness and is designed primarily to stimulate an interest in reading and the eventual founding of libraries in the places to which they are sent.

To sum up, it seems to be the generally accepted opinion, so far as can be discovered from the libraries making use of either of these systems or their variants, that in large cities or towns where existing libraries can be brought under the management of a strong, well-equipped, and efficiently managed public library, the arrangement is for their mutual advantage.

If, however, the enterprise is a new one, it is thought by many a much better policy to confine the collection of books to a single main library, making it large and strong in works which individuals can not afford to buy for themselves—expensive art works, scientific and technical works, sets of periodicals, publications of learned societies, dictionaries of various languages, etc. A library thus thoroughly equipped is a power in its community, and may then well become a point from which distribution can be made to different localities within its area by deliveries and agencies.

The question as to the best system for any particular library to follow must, therefore, be largely one of policy, governed by local requirements and the means which the library can command.<sup>1</sup>

#### HEATING, VENTILATION, AND LIGHTING OF LIBRARIES.

By NORMAND S. PATTON, Architect, Chicago, Ill.

The problem of heating, ventilating, and lighting libraries does not differ essentially from the same problem in other buildings where people congregate. Therefore it is not a library problem, except in some special applications, and it is not so important to know the opinion of librarians on these topics as that of architects and sanitary engineers. I will try to give, in condensed form, the opinions of the best authorities on heating, ventilating, and lighting, not as a scientific treatise, but as practical hints, to which will be added a consideration of the portions of a library which require special attention and where mistakes are most likely to be made.

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<sup>1</sup> Discussion brought out the great disadvantage of the delivery station as compared with the branch, for it left out the personal work in guiding reading which is so vital to the best results, also that after a hard day's work people will go to a reading room in a branch near home when, if there were none nearer than the central library, they would stay at home or drop into a neighboring saloon. If means allow, the best plan seemed a branch with reading room equipped with reference books, periodicals, and a small stock of general literature and, most important, with a skillful attendant to give needed personal assistance in selection. But this more thorough provision is clearly much more costly than the delivery station.—M. D.

## HEATING AND VENTILATION.

These topics can not be considered apart from each other, because all the air brought in for ventilation in cold weather must be heated, and the kind of heating apparatus used has much to do with the system of ventilation that accompanies it. A perfect system will give independent control of the heating and ventilation, so that any room may be heated with or without ventilation, or ventilated with or without heating. This separate control of heating and ventilation is necessary because the two are not needed in the same relative proportion in different rooms, or in the same room at different times. Thus, if the number of occupants in a room be increased, the ventilation should be increased, but the heat diminished.

**Heating.**—Heating is to offset cooling. A building is cooled in two ways: (1) By loss of heat through outside walls, windows, and roof; (2) by introduction of cold air for ventilation. The ordinary rules by which steam fitters figure the size of their apparatus are based on the cubic contents of the building. These rules are utterly useless and misleading, because in buildings continuously heated, the cubic contents has no more to do with heating than has the color of the librarian's hair. When a cold room is first warmed, the whole volume of air and the substance of walls and floors must be heated, requiring an excess of heating over what is needed to maintain the temperature once gained. For this reason there must be a reserve power that can be called on to heat up quickly, as on Monday morning if the building has been cold on Sunday. When the air in the building is once heated its volume does not concern us; we need only restore the heat it loses. If a partition stands between two rooms, both of them warmed, it can not cause a loss of heat. The only walls that cool a room are those exposed to the weather. A large room exposed only on one end and having two windows would require less heating than a room say one-third the size exposed on two or three sides and having four windows. The glass of the windows, on account of its thinness, loses more heat than the thick walls; a square foot of glass losing as much heat as 5 to 10 square feet of wall surface. The amount of heat required by various rooms, aside from the ventilation, will be in proportion to the amount of glass surface and its equivalent in exposed wall surface. Steam-heating contractors generally put enough radiation in a building, but fail to distribute it properly, overheating some rooms while others are cold. Attention to the above principle will avoid this result. The roof often allows great loss of heat. Walls are thick and usually have air spaces, but roofs are often thin, permitting escape of heat in winter and admitting it in summer. Roof plank should be 2 to 3 inches in thickness, and a tight floor laid in the attic to retain the warmth in the rooms below.



Our second source of cooling is the air admitted, whether unintentionally through the cracks, or intentionally as ventilation. This air must be heated. Ventilation costs in proportion to its efficiency.<sup>1</sup>

**Apparatus.**—The method of heating is often decided by the money available. The best method is by hot water. Its advantages over steam are: (1) A perfect control of temperature in all kinds of weather without use of complicated attachments; (2) greater economy of fuel. Steam is either boiling hot, or there is no steam at all. Therefore, in mild weather, the building, if heated at all, is overheated, with a corresponding waste of fuel.

For a building of moderate size, a hot-air furnace is by no means to be despised. It will give better ventilation than steam or hot water, as ordinarily put in, and is much cheaper in first cost.

Still another method of heating deserves to be better known—the combination of hot air and hot water. This is obtained by inserting a water-heating coil into a hot-air furnace, and connecting it with radiators. This retains all the advantages of the hot-air furnace and adds the direct radiation which can be carried to points too distant to be reached by hot air. It is intermediate in cost between hot air and hot water, and is more economical of fuel than hot air alone.

**Ventilation.**—The amount of ventilation depends on the number of occupants of a room. In order to maintain a proper purity of atmosphere, there should be supplied not less than 30 cubic feet of air per minute for each person. As the air in a ventilating duct rarely moves more than 300 feet per minute, it will be seen that we require a ventilator about 1 foot square for every 10 persons. If gas is used for lighting, additional ventilation is required; each gas burner being counted equivalent to 5 persons in vitiating air. If a reading room is occupied for several hours at a time, no less than the above amount of air should be provided; but if a room is large in proportion to the number of occupants, and is occupied for only a short time, we may allow for the large volume of fresh air with which we start, and reduce ventilation somewhat.

The book room being large in proportion to the number of occupants, the leakage around the windows may provide sufficient air, or windows can be opened where the draft will not be felt; but if many are admitted to the shelves, it will be well to provide for changing the air once or twice an hour.

Taking up the question of the means of producing the desired ventilation, there are several important principles to be observed. First, air will not move unless positive force is applied to it. To build a ventilator will not necessarily make ventilation. The forces used to move air are two: first, the mechanical method by means of a fan

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<sup>1</sup>The thermostat attachment for automatic regulation of the heat was commended by several who had found it very useful. Warnings were given from others against heating through the floor. The apparatus was difficult to get at, and those compelled to stand or walk over the heated surface found it uncomfortable.—M. D.



driven by a steam engine or other motor. When an electric current can be obtained, a fan driven by this power gives a convenient and positive means of ventilation. We may use a fan to force in the fresh air or to exhaust the foul air, or in large buildings we may use both, thus getting a most complete control over the air currents. Such an apparatus can be used as well in summer as in winter, and is so powerful that high velocities can be secured in the air ducts, thus reducing their size and cost. The second and more usual method of ventilation is by the draft of a heated column of air. We need artificial ventilation when the outside air is cold; and in this case a flue, such as that of a fireplace, will have an upward draft. If such a flue be favorably located and surrounded by warm rooms, it will be a fairly efficient ventilator and give a velocity from 180 to 300 feet per minute, according to its height, temperature, and size. The higher and hotter a flue, the more rapid its draft, and the larger its area, the less the retardation by friction. But if the flue be in an outside wall where it is chilled, it will probably give a downward instead of an upward draft. In such a case the flue must be heated by a fire, as in a grate, by steam pipes in the flue, by placing the ventilator next to the chimney or other source of heat, or by having gas jets in the flue.

With this system of ventilation, the fresh air is brought in by the draft of the heating apparatus—either a hot-air furnace or a so-called “indirect” radiator, which is a coil of steam or hot water pipes in the basement, through which the fresh air is forced; or a third method the “direct-indirect” radiator, which stands in the room to be warmed and radiates heat from the surface, while in the center are flues to which air from outdoors is brought in a duct, and when heated is discharged at the top of the radiator.

The system of ventilation by natural draft has the disadvantage that the forces producing the air current are not very powerful, and there is danger that at times the current will be reversed by the wind. If the wind were constant in force and direction, we could use it as a means of ventilation; but we can in any case make the wind counteract its own mischief. If the tops of the chimneys and ventilators are carefully located so as to avoid adverse currents, the wind will aid the draft. We can also make the wind force air into the building through the heating apparatus, by arranging air inlets on all sides of the building, joining in a common chamber, and fixing in each inlet automatic valves which admit the air, but prevent its escape.

In determining the location of the inlets and outlets for the air, it should be borne in mind that the foul air does not rise to the ceiling or fall to the floor, but diffuses rapidly through the whole room. The hottest air, whether fresh or foul, will always rise to the ceiling, and the coldest air, whether fresh or foul, will fall to the floor. From this it follows that if we are to keep a room warm, we must take out the foul air at or near the floor, and if we wish to cool the room we must make

an opening near the ceiling. The inlets may be in the floor or in the wall at any height; the main point to be observed is to prevent an unpleasant draft on the occupants. There is the least danger from drafts where the inlets are in the floor, the principal objection to this arrangement being the accumulation of dirt in the registers. When there is a fireplace, it is well to let it act as the ventilator, proportioning the size of the flue to the amount of ventilation required. A gas log placed in such a fireplace will provide an immediate increase of heat, and thus of ventilation on special occasions, while ordinarily the natural draft will suffice.

For rooms not larger than 20 by 30 feet a single inlet and outlet will give good ventilation; for larger rooms it is well to draw the foul air from several points; for very large rooms there should also be several inlets; but one ventilator that ventilates is better than ten that do not; and it is often better to make one ventilator very efficient by the application of heat or mechanical power, than to increase the number without such assistance. The system of ventilating ducts to be adopted is a matter of convenience in each case. No one system is best for all cases. When each room has its independent flue, there is the least danger of one room drawing the air away from another. When the small ventilators are united into a general shaft, they should be continued up independently the height of one story, so that each will have its independent draft before they are united. In any system as much air must be admitted to a building as is drawn from it; otherwise if the supply be reduced, the ventilators will draw against each other and cold air will descend in some of the ventilators to supply the others that have a more powerful draft. Those libraries which have the books arranged in stacks several stories high inside a lofty room present a problem of unusual difficulty in the ventilation. The hot air tends to accumulate at the top and is destructive to the books as well as to the readers. If this hot air be not contaminated by the burning of gas, the evil can be mitigated by producing a circulation of the air, taking advantage of the chilling effect of the windows to make a descending current on the outside walls while fresh air rises in the center to take its place. In summer the ventilation of such a room should be taken from the top.

No ventilating apparatus can adapt itself to the varying conditions of the weather. There must be an intelligent supervision of the ventilation or the best system will fail.

#### LIGHTING.

The most difficult part of the library to illuminate by day is usually the delivery desk. This difficulty comes from the fact that the counter where books are delivered should be near the center of the building. One solution is to place the counter near enough one outside wall to get a strong side light. Front light is to be avoided. Frequently there seems to be no other help than a skylight. This is very effective when

it can be used. The objections are the liability to leak and the heat that accompanies the light in summer.

The lighting of other parts of a library offers no special difficulty, provided the rooms are small; but when we have areas of considerable width special care must be taken. The one important fact to bear in mind in lighting large areas is that the light shines downward from the sky; therefore it is only the upper portion of a window that can light far back into a room. If we increase the width of a room beyond the ordinary we must increase the height also so that the windows may be carried up high enough to throw the light back to the farther side. As there is always an excess of light near the windows, we may increase the lighting of a room by raising the windows higher without increasing their size. This raising of the windows leads to several architectural developments of importance.

If the windows are 7 feet or more from the floor, the entire wall space may be used for bookcases. This is a common arrangement for book rooms and is sometimes adopted for reference books in a reading room, as in Yale University. The reading room at the University of Michigan has also windows high above the floor. If the room is made still higher, and the windows raised in proportion, we may be able to build a low addition against the outside of a book room, keeping the roof of this addition below the windows, and use the space thus gained for librarian's room, cataloging, etc.

A variation from this arrangement is to remove the wall between the main room and the side addition, and substitute a row of columns, using the space thus gained as an addition to the book room or reading room as the case may be.

If we inspect this final result of our development of the elevated window, we shall discover that we have no new form but that familiar type of building which the Romans used for their basilicas, and afterwards the Christians for their cathedrals, and I may add we moderns for our factories. This method of lighting is used in the reading room of Cornell University, but it is as yet not generally known as available for library architecture. This idea, which may be called the basilica plan, is capable of a much wider application than has yet been given it.

Passing to the question of artificial light, the book room requires special arrangements to find any book without using an extravagant number of lights. I recommend chandeliers or ceiling lights, sufficient only to give a moderate general illumination; supplemented by movable search lights in each aisle between cases, to be turned on only when a book is sought. As to kind of light, the electric is by all means best. First, because it does not vitiate the air. The burning of gas in a reading room renders the problem of ventilation doubly difficult, and in the book room it injures the bindings. The objections to gas are so great that if electric light can be procured, the difference in cost should not be considered. The electric light (incandescent of course) lends



itself to economy in the book room from the ease with which it can be turned out and lighted again. A switch at the end of each bookcase may light one or more fixed lights in the next aisle, or the lamp may be attached to a flexible cord, long enough to reach any book, and turned on only when in use.

When the books are arranged in a stack several stories high, with glass or perforated floors, light may come either from the side or from above. The side light will not penetrate the narrow aisles between the cases more than about 20 feet effectively. Therefore, if there is side light only, the stack room must not be more than 40 feet wide if lighted on both sides, but may be of any height. If skylights are used, the light will not penetrate through more than two floors, and the stack can be only three tiers high, but may be of any width.

A combination arrangement can be made with cases more than 20 feet in length lighted at the outer ends by side windows, and at the inner ends by a central court covered by a skylight.

### FIRES, PROTECTION, INSURANCE.

By R. B. POOLE,

Librarian Young Men's Christian Association of New York.

The destruction of a rare collection of books is more to be deplored than the loss of almost any other species of property.

The final cremation of the Alexandrian Library in the seventh century is an event as notable almost as any in history, and the loss of its 700,000 rolls is more keenly felt to-day than ever, when scholars are searching old libraries and monastic vaults for missing manuscripts and for documents heard of but never seen by men of this age. We can only picture in imagination what *lacunæ* would have been supplied in sacred and classical literature, had this vast treasury of learning, the spoils of the victorious Amru, been presented to John the Grammarian, who asked for it from his willing friend, the conqueror. But the Arabian general was subordinate to the Kalif Omar, and the greatest library of antiquity was sacrificed to bigotry, if we may credit this ancient story.

The destruction of the Roman Empire carried with it the annihilation of many libraries, yet Gibbon remarks, "Our treasures, rather than our losses, are the object of my surprise."

Constantinople, from an early period in the Christian era to the invention of printing, was the great literary center of the East, and many libraries in Europe have been enriched from her storehouses. In the century succeeding the burning of the Alexandrian Library, it is related, though with some grains of doubt, that the Emperor Leo III, the iconoclast, burnt a considerable library at Constantinople, and it is further added that he burned the librarians, too. It is undoubtedly true that fire did a destructive work in this great literary emporium before its surrender to the Mohammedans in 1453.

Loss by fire in the early centuries of our era, when books were multiplied only by the hand of the copyist, was often irreparable. The destruction of a manuscript meant, often, the loss of the only extant copy, or one of a very limited number, which could be reproduced only at a great expense. The printing press introduced a new age, and the power of the fire fiend was broken. Copies of early codices were printed in numerous volumes, and acquired a wider diffusion; still, that diffusion in the early days of printing was limited, and to-day incunabula are the great treasures of modern libraries. A fire in a library of to-day would not be as disastrous as in the ages before printing, unless we except such great depositories of MSS. in Europe as the Bodleian, the British Museum, the Bibliothèque Nationale, and the Vatican. Still, every important library has works that are unique, or if they exist in duplicate, are unprocurable. Collections exist which represent the labor and search of many years, and are a unit in themselves.

We can name only a few celebrated fires in libraries since the days of Gutenberg, and before this last half century. The Augustinian Library, at Mainz, was totally destroyed in 1649. The great library of the Escorial, at Madrid, was partially burned in 1671. In 1685, the library of the Canons of St. Antonio, at Venice, was destroyed by fire, and in 1697, the Royal Library of Stockholm. In the next century, 1731, the libraries that formed the basis of the British Museum, the King's Library, and the Cottonian, were partially burned. when 97 manuscripts were totally destroyed, and many more charred or scorched. The archducal library of Brussels was burned the same year. The great fire at Moscow in 1812 involved the destruction of its great library. The Library of Congress was fired by the British in 1814, and in 1851 was reduced to 20,000 volumes by fire. There have been a number of fires in the last two decades. In 1873, the Manchester (England) Athenæum Library, containing 19,000 volumes, was burned. The most disastrous fire of this period was the burning of the Birmingham Free Library, January 11, 1879. The loss was about \$300,000. The library had in its reference department 50,000 volumes, and contained the great Shakespeare Memorial Library, besides other special collections.

The Welsh University library, the most valuable collection of books in Wales, was totally burned in 1885. The free library of Newcastle-on-Tyne suffered to the extent of \$5,000 from fire in 1884, from overheating the ventilators with gas lights. The Brussels University library lost 65,000 volumes in a fire in July, 1886. In 1890 the great library of the royal family of Belgium, at Lacken, was burned, and in the same year the University of Toronto was cremated, the loss being 24,000 volumes.

Fires in libraries in this country have been significant in numbers, rather than in disastrous results in the last twenty years. In 1873 the Indiana University library, containing 15,000 volumes, was destroyed

by fire caused by lightning striking a telephone wire. The Mercantile Library of Philadelphia suffered serious damage in 1877 from water used to extinguish a fire in an adjoining building. Fifty-five thousand volumes were injured, for which \$42,000 was recovered. The books were not an entire loss, as they could still be read, though stained.

A kerosene lamp was the cause of a fire in Hobart College, Geneva, N. Y., in 1885, by which "many valuable books that can not be duplicated" were destroyed. The public library of Fall River, Mass., lost 6,000 volumes in 1886. The insurance was carried by the city. In the same year the law library of Minneapolis was burned, also the public library of Princeton, Ind., and a part of the high school library of Yonkers, N. Y. The public library of Peoria, Ill., on March 25, 1888, had 30,000 volumes damaged by water and improper handling. The insurance was only \$8,700. The building of the Young Men's Christian Association at Twenty-third street and Fourth avenue, New York, was seriously burned July 28, 1889, while the library was not injured; the fire ran up the elevator within 15 or 20 feet of it. The library at Colchester, Conn., valued at \$5,000, was burned in 1890. The same year, in Maine, the library at Lewiston (11,000 volumes, insured for \$6,000) was destroyed, and the Rockland public library and the Skowhegan library.

This brief résumé of fires, past and present, while far from complete, is sufficient to prove the imminent danger to which libraries are exposed from fire, and that the principles of protection should be thoroughly studied and applied in library architecture.

In accordance with the general plan of the papers for this manual, this topic should treat: (1) Of the points on which as librarians we are agreed, and (2) of those which occupy debatable ground.

While it may not be practicable to set forth this subject on these precise lines, still the theory or the practice of leading librarians may in a measure be formulated. Statistics for this purpose have been gathered from 56 libraries, 50 of which contain upward of 25,000 volumes each. The 56 libraries reporting have in the aggregate 6,225,721 volumes. Thirty of these libraries, containing 2,473,074 volumes, give a valuation of \$4,651,875. The 26 not reporting value embrace some of our richest collections, and number 3,729,624 volumes. The entire value would doubtless reach \$11,000,000. Official figures (1893) show that there are in the United States 3,804 libraries containing over 1,000 volumes, and that these libraries have a total of 31,171,354 volumes; the libraries reporting will therefore represent about one-fifth of this total, but undoubtedly a much larger fraction of value.

#### POINTS OF AGREEMENT.

1. Libraries generally regard it wise to insure. Of 56 reporting, 35 insure their books, 11 (generally State and national libraries) do not, while 10 make no report on the subject. Thirty-three insure their



books separate from their building, insuring 3,018,370 volumes for \$2,090,754. The amount covered by insurance in different libraries will vary from about 33 to 75 per cent of the total valuation, falling probably below 50 per cent on the average, a low figure. Premiums on libraries vary about 300 per cent. In discussing at Chicago the policy of insuring, it was thought by some that a library financially able should carry its own insurance, particularly if it was supported by the city or State.<sup>1</sup>

Of the 56 libraries noted, all except 5 own their buildings, and 39 give valuation as \$8,755,617. Insurance figures on these buildings are not very complete or satisfactory. Official records show that there are 986 libraries in the United States owning buildings.

2. Librarians believe their books should be stored in fireproof structures, and are building, so far as means will allow, on fireproof principles. Absolutely fireproof buildings are costly, and a substitute for them is often the only alternative. As an indication of the practice on this point, 22 libraries report fireproof buildings, while 5 buildings are so called, 11 are partly fireproof, and 18 are not. These buildings are generally constructed of brick, or more commonly of brick and stone. Interior construction in these buildings is not so decidedly fire resisting. The floors in most cases are made of fireproof materials, as fire brick, wood laid in cement tiling, iron girders and brick, etc. Wood enters largely into the construction of the cases (37 so reporting), a construction not as objectionable as it might seem, provided floors and partitions are properly protected. Iron is used more in balconies and stairs.

Special attention has been given by this association to architecture. At the Cincinnati conference in 1882 the first report on this topic was made. Five years later Mr. Larned reports that 18 libraries had been completed in the two previous years, and that 23 were in progress, many being fireproof. Two years later Mr. Van Name, at the St. Louis conference, reported 55 buildings completed, or under construction. Some allowance should be made for overlapping. He notes that the buildings for our best treasures are to be fireproof, there being 13 such. Many were the gifts of private individuals.

To illustrate the advance made since 1876 in the erection of fireproof buildings we quote comments made respecting the Birmingham disaster in 1877: "The loss by the Birmingham fire," said the New York Trib-

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<sup>1</sup>The insurance companies charge the whole amount of the risk plus running expenses plus their profits. Therefore the premium is greater than the risk, and wealthy cities and towns, like wealthy merchants, may insure themselves at a profit, and in the long run greater care is taken of uninsured property. Usually the same appropriation can be had for the library whether it uses part of it for insurance or not, and in the rare cases of fire the city or town makes a special appropriation to replace. Those who urge most strongly the greater economy of this method also admit that it would be unwise for any librarian or trustees to omit insurance unless they first secured the formal approval of the authorities, thus forestalling the violent criticism sure to be made in case of a heavy loss.—M. D.

une, "is a lesson to us on this side of the ocean of the necessity of providing absolutely safe structures for our own precious collections, many of which are undoubtedly in constant danger of conflagration, and are not contained in structures worthy of being called fireproof at all." Justin Winsor, referring to the preservation of books and to the same fire, said: "Too large a proportion of such edifices of to-day ignore utterly this consideration." Many so-called fireproof buildings of 1876 would not pass inspection as such to-day.

Bad construction has been the rule rather than the exception in our public buildings till recent years, and to-day we are far from emancipated from its influence. F. C. Moore, president of the Continental Insurance Company, New York, and an authoritative underwriter, in a brochure on "Economical fire-resisting construction," says: "It may safely be assumed that fully 40 per cent of the losses of this single company, and therefore of every other, are due to incorrect construction of buildings. This means that nearly \$50,000,000 worth of property is destroyed annually in this country which might be saved if our methods of constructing buildings were more nearly correct."

Edward Atkinson, the economist, in an article in the *Century*, February, 1889, entitled "Slow-burning construction," says: "The worst examples of combustible architecture are to be found among our prisons, hospitals, asylums, and almshouses; next among college buildings, libraries, and schoolhouses." Quoting from the *Insurance Chronicle*, he says that in 1887 126 colleges and libraries were burned. The libraries referred to were undoubtedly not of great value and poorly protected. Risks on the better protected libraries are good. Speaking of libraries the *Ætna Insurance Company*, of Hartford, says: "We consider the most desirable risks those that are kept on iron racks, or in iron cases, in fireproof buildings; libraries in buildings of ordinary construction are not considered very desirable risks." The *Liverpool, London and Globe* respond, "We find libraries, as a rule, profitable risks."

There were some reasons, and cogent ones, too, why library buildings, as well as other structures, in the few decades past were so ill constructed. Architecture as an art was almost unknown then in this country; technical schools had not been established in which architecture was taught, and the country was not prepared to adorn its cities and towns with edifices that combined, with beauty and solidity, qualities of construction that would make them absolutely fireproof. In place of the old fire traps, which were a menace not only to the books but to the librarian and his readers, fireproof buildings are rising all over the land, ornaments to city and town, and safe depositories of the collections they are gathering from year to year.

The question was asked, "Is your building and are your books better secured from fire than in 1876?" Twenty-six replied, yes. Eight of the remainder were established since.

3. The importance of keeping records or inventories of libraries, which can be used to prove value, is appreciated as shown by returns.

Only six report no records usable for such a purpose. Methods for protecting these records are considered below.

4. Nearly all libraries report appliances for extinguishing fires, as hose, water pails, fire extinguishers, fire axes, etc.

The British Museum has a fire brigade composed of members of its staff, with a code of rules for their government. (See *Lib. Jour.*, 4: 52.)

#### UNSETTLED QUESTIONS.

While libraries are being constructed more and more on tested fire-proof principles, it is also true that these principles are of recent adoption in many particulars, and as yet not fully comprehended nor put in practice by all. These may be briefly set forth, substantiated by authorities.

1. Two prime principles enter into the construction of a fireproof building: (1) It should be fireproof without and (2) nonfire communicating within.

Material formerly supposed to be fireproof has failed under the test. To have said a few years ago that iron and granite were not fireproof would have made one a laughing stock, but granite in the Boston fire of November, 1889, crumbled into sand; and iron is no longer considered safe unless covered with fireproof material. It has been said that there was not a fireproof building in the track of the great Chicago fire. The Boston fire of 1889 was checked when it reached "the brick wall and iron shutters of a building of superior construction."

Brick stands first among building materials in fire-resisting qualities. Prof. G. P. Merrill, curator of geology in the United States Museum, in his work on *Stones for Building*,<sup>1</sup> page 356, says:

Data are not at hand for estimating accurately the comparative enduring powers of various stones under these trying circumstances. It seems, however, to be well proven that of all stones granite is the least fireproof, while the fact that certain of the fine-grained siliceous sandstones are used for furnace backings, would seem to show that if not absolutely fireproof, they are very nearly so.

Professor Winchell places fire-resisting stones in this order: (1) Marble, (2) limestone, (3) sandstone, (4) granite, (5) conglomerate.

Since the days of elevators the roof has proved to be one of the most exposed parts of buildings, because of the draft through the shaft. A fire beginning in the basement is drawn at once to the roof, which, if hollow and combustible, is in a few moments a mass of flame. The roof should be constructed to prevent drafts of air within it, and should be of fireproof material, as metal, porous terra cotta metal, and covered fire brick.

2. A building of fine, solid, fireproof exterior may yet be a fire trap. "The first principle to be observed," says Mr. Moore, the underwriter, "with a view to resisting fire, is to exclude air drafts from those por-

<sup>1</sup>New York State Museum Bulletins No. 3 (out of print) and No. 10, on *Building Stone in New York*, are also of value in this connection.—M. D.



tions of the building which are vital to its endurance, viz, floors, roof, partitions, etc. Into all these wood may safely enter if drafts be prevented by incombustible material, such as mortar or cement." A fire-proof building will be so constructed inside as to consist of distinct compartments, separated by partitions of brick, terra cotta, etc., while its floors will be laid in cement, or be composed of incombustible material, and its ceilings laid on metallic lathing, or otherwise protected from fire and vermin. Incombustible cases, stairs, and balconies will increase the security.

A basis of rating insurance indorsed by the New York Board of Fire Underwriters, National Board of Fire Underwriters, and other boards has been prepared and is embodied in the "Universal mercantile schedule." The basis of rating is a standard building in a standard city, and is 25 cents per \$100. On this basis rates vary according to construction and environment of each separate edifice. From the schedule of January, 1893, we quote the requirements of a standard building:

A standard building is one having walls of brick or stone (brick preferred), not less than 12 inches thick at top story (16 inches if stone), extending through and 36 inches above roof in parapet and coped, and increasing 4 inches in thickness for each story below to the ground, the increased thickness of each story to be utilized for beam ledges. Ground floor area not over 2,500 square feet (say, 25 by 100); height not over four stories, or 50 feet; floors of 2-inch plank (3 inches better) covered by seven-eighths or 1 inch flooring, crossing diagonally, with waterproof paper or approved fire-resisting material between (if tin or sheet iron between, see deductions); wooden beams, girders, and wooden story posts or pillars 12 inches thick, or protected iron columns; elevators, stairways, etc., cut off by brick walls or plaster on metallic studs and lathing, communications at each floor protected with approved tin-covered doors and fireproof sills; windows and doors on exposed sides protected by approved tin-covered doors and shutters; walls of flues not less than 8 inches in thickness, to be lined with fire brick, well-burned clay or cast iron, and throat capacity not less than 64 square inches if steam boilers are used; all floor timbers to be trimmed at least 4 inches from outside of flue; heated by steam; lighted by gas; cornices of incombustible material; roof of metal or tile; if partitions are hollow or walls are furred off there must be fire stops at each floor.

It may seem strange that wooden girders and posts are recommended. Mr. Moore, before quoted, whose work has the commendation of the American Architect, says that unless iron girders are protected by terra cotta or burnt-clay brick, they are not as safe as wood, provided wooden pillars or girders are 2 inches thicker than required to bear the superimposed weight. The charred wood acts as a shield to retard combustion. Iron is treacherous, and under a heat of 1,000° F. or more will expand, if not fuse, and if proper allowance is not made for this expansion, will throw the walls. Two inches should be allowed at each end for a 50-foot girder. The practice now seems to be very general to cover iron with hollow brick or other fireproof material, to prevent this expansion.

Further, the building referred to above should have its doors and shutters covered with tin. It has been demonstrated that a door of

soft wood covered with tin is better than one entirely of iron. Iron will curl. Thirty-five libraries report no fireproof doors and shutters, and iron is generally used for the purpose.

Gas lighting is here recommended, but the New York branch of the Liverpool, London and Globe Insurance Company, in a letter to the writer, approves of electric light. Improved installation is doubtless recommending its use.

The importance of fire stops can not be too strongly emphasized. Not all libraries can erect thoroughly fireproof buildings, but the alternative is not a fire trap for human sacrifice. Elevators, hollow partitions; hollow roofs and floors, and defective flues have in the last few years been the means of destroying millions of property and many lives.

The object of fire stops is to close up all air passages in floors, partitions, etc., with plaster or cement, and thus prevent fires from spreading from one compartment to another, turning a fire trap into a kind of slow-burning building, and possibly holding the fire till the fire engines arrive and the inmates escape. The fire stops can be used at little expense, and there can be no excuse for omitting them from any except thoroughly fireproof buildings. A slow-burning building (technically factory construction) is one in which the wooden material is consolidated in such a way that the fire can be held in check. There are no concealed spaces by which the fire can pass from one room to another. Every part is open, so that water can reach the fire. Wood and iron are exposed to two enemies, dry rot in the one case and rust in the other.

The precautions against fire by exclusion of air drafts and the protection of the iron may tend to develop both of these weaknesses. As a preventive, beams should be bored, and iron coated with a material that is not an active absorbent of moisture, such as plaster of paris and cement. Lime mortar is a preventive of rust, as well as of dry rot. Wrought iron is more susceptible to rust than cast iron. The latter oxydizes only on the surface; wrought iron is consumed by rust. The action of rust on steel is not well known, and yet this material is coming into extensive use in constructing steel-skeleton buildings, like the Masonic Temple, the Woman's Christian Temperance Building in Chicago, the World Building, the Plaza Hotel, etc., in New York. I know of no library adopting this style. The advantages are that steel costs less than wrought iron, that the curtain walls of masonry, 12 to 20 inches thick, not being supporting walls, need not be much thicker at the base than at the top, thus leaving very much more room on the lower floors, a great economic gain.<sup>1</sup>

*Care of inventories.*—Inventories of a library should be kept in safes outside the building. This point is emphasized by such companies as the Liverpool, London and Globe. "Catalogues," say they, "should always be kept outside the library building for reference in case a loss

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<sup>1</sup> See *Skeleton Construction in Buildings*, by William H. Birkmire (Wiley).



should occur, showing original cost of books, and as full a description as possible." The Home says: "It is of the utmost importance that a complete catalogue of the library should be kept in some safe place away from the library itself." The practice of libraries in this matter is not in accord with these recommendations, only 9 keeping their records in safes or vaults outside, while 17 do not protect in the building and 10 make no response. Libraries should be managed on business principles, and the cost of the books should be recorded and an approximate valuation of gifts kept, and these records preserved outside, so that they can be produced in case of fire. A duplicate accession catalogue of the library of the Young Men's Christian Association of New York is kept outside in safe-deposit vaults. The last catalog is occasionally taken from the vaults and written up and the copying certified by affidavit.

The Ætna Insurance Company recommends, also, that the record of loans in circulating libraries be kept in a safe place.

3. Fireproof buildings and fire-protected compartments are costly equipments, but a closed door or shutter, a pail of water in a convenient place, a watchman's presence at the moment of peril, may avail more than all; and yet these are often considered of minor importance till some day it is found that a cup of water, if it had been accessible, or a fireproof door, if it had been closed, would have prevented the sacrifice of a valuable library.

Of 56 libraries reporting, 31 have a watchman, 8 others have a janitor on the premises, while 17 have no such guardian.

4. With respect to iron shutters, only 16 have them, 8 do not require them, while 32 others are without them; 36 have no fireproof doors, 11 have them, while 7 report them partially fireproof.

Light should not be shut out from a library for the purpose of lessening the hazard of fire from windows, though this was done in the case of a prominent library.

Insurance companies do not, as a rule, make special arrangements with libraries as to settlement in case of loss. Seven only report such agreements, as follows:

*a* We have, in accord with underwriters' rules, placed a valuation of \$100,000 on the collection and insured to 75 per cent of that in order to escape the liability of being coinsurers.

*b* Our inventory is to be accepted as issued in our printed reports.

*c* Files of accession books, etc., are to be proof of value.

*d* Policy requires, in case of loss, itemized list of destroyed articles, sworn to by librarian.

*e* Shall maintain insurance upon above-described property to its full cost value.

*f* It is stipulated that we can not recover more than the cost price of books purchased.

*g* A fixed valuation is agreed to as of date of policy.

Two libraries file a list of rare books or MSS. with the insurers.

Eleven libraries of the 56 have had fires, 9 of which were insured.



Fifteen libraries insure imported books in transit, 8 others sometimes.

One library effects a floating insurance on books lent to its branches for lecture purposes.

In the conference discussion of this paper it was ascertained that one library insured its card catalogs.

It was said that bookbinders were not responsible for loss by fire while books were in their hands. One librarian reported that he insured books at the bindery.

A floating insurance could be effected on books at the bindery by making the amount sufficient to cover the value that would be represented there at any time during a certain period.

Fourteen libraries are in more or less jeopardy from water overhead, and 11 have suffered in consequence, or from overflows and leaks.

"If any building," says Dr. W. F. Poole, "should be practically fireproof, it is a library building," and "a wooden library building without any of the modern fireproof devices is a fire trap and its construction a crime." It may not be possible to erect in all cases a perfectly fireproof building, for that means a liberally-supplied exchequer, but no library should be deposited in a building that has not the inexpensive safeguards that have been named and are within reach of all. Lower rates of insurance will result from added securities, valuable collections of books will not be exposed to so great risks, and public confidence and support may be expected. The library that looks for valuable gifts should have them so well housed and cared for that books will be drawn in as well as drawn out.

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#### FIXTURES, FURNITURE, AND FITTINGS.

By HENRY J. CARR,

Public Librarian, Scranton, Pa.

The topics covered by the foregoing alliterative and comprehensive heading might, in one sense, be held to include almost everything pertaining to a library, except its building or quarters and its stock of literature.

Under certain other heads, likewise assigned for similar treatment at this time, however, there is likely to be due consideration of the

necessary appliances connected with each of such particular topics. It is proper, therefore, that this paper shall, so far as may be, refrain from trenching on those special fields.

As to any conclusions regarding best methods or the most approved forms of a library accessory which may be drawn from current practice of the users thereof, it must also be kept in mind that the older libraries are more often unable to change, and so of necessity continue devices which later libraries free to act at pleasure as carefully avoid. Therefore answers to queries, or statistical circulars bearing on many library furnishings, are not always the best basis for opinions, nor likely to show fully the real progress made in such matters.

One of the earliest and most effective agencies toward a betterment and reasonable uniformity in library supplies grew immediately out of the formation of the A. L. A. in 1876, through the acts of its cooperation committee. The reports of that committee as given in the *Library Journal* for several successive years are yet valuable reading for their full discussions of the several matters under study. From the work of that committee grew a cooperative supply department (aided largely by the personal enthusiasm and persevering support of one person), afterwards fostered through various vicissitudes to later and present survival as the Library Bureau.

With no intent to advertise, but rather for convenient reference and brevity in the present paper, as well as for aid to seekers, no hesitation is felt in citing the ample and comprehensive illustrated catalog of the Library Bureau as being both an available and very desirable guide in fitting up a library. Little comment will follow herein, therefore, as regards the major part of the articles described in that publication, since its chief library specialties represent the tested and elaborated ideas of ample cooperative experience, and the purchasers thereof may reap full benefit with a minimum of trouble to themselves.

As to the innumerable stationers' articles used by librarians, the personal preference and experience of the particular user must be the guide, so that consideration of those items is outside the scope of this paper.

#### GENERAL PRINCIPLES.

Good principles to observe in procuring or planning the furnishing of a library are: (1) Usefulness and adaptation to the circumstances of each particular case, and (2) true economy may often be practiced in obtaining the better, though more expensive, article at the outset.

The limitations of the human form and convenience are no less factors in the case, and necessarily have much to do with establishing certain sizes and shapes, e. g., a library counter, of a height to match certain other decorative finish and woodwork may, in the long run, prove an unmitigated nuisance because just too low for convenient service standing and too high to use sitting. Undesirable tables with massive and elaborate legs and fancy corners, and chairs having

extraordinary seats and terrific backs, are not an unknown thing in some libraries where so-called artistic features have been allowed to prevail.

Libraries must almost inevitably be maintained at an extreme of economy, therefore every superfluous carving or molding which serves as a dust catcher means so much more janitor's work and consequent burden. So in the use of dark woodwork and wall decoration is entailed years of penalty in added cost of lighting over that needed for the same interior in light colors.

#### BOOK STORAGE AND SHELVING.

Since the chief feature of a library is apt to be its books, one would naturally expect first consideration given to shelving and like conveniences for holding them.

Mr. Gladstone, in his notable paper on "Books and the housing of them" (*Nineteenth Century*, 27, 384-396, March, 1890; also issued separately as a pamphlet), has most pertinently said that "The objects to be contemplated in the bestowal of our books are three: economy, good arrangement, and accessibility with the smallest possible expenditure of time." His remarks were especially about private collections, but the statements apply equally to public libraries.

None too much has been printed on this important and fundamental matter of providing suitable accommodations for the books. Some of the most salient and instructive statements, from the modern American standpoint, are by Dr. William F. Poole, his earlier one being on the "Organization and management of public libraries" (United States special report on public libraries, 1876), with illustrations. A subsequent paper is on "The construction of library buildings," read before the A. L. A. at its Washington conference of 1881 (*L. j.* 6: 69-77; *Am. Architect*, 10, 131; and separately by the United States Bureau of Education as Circular of Information No. 1, 1881, etc.); and a later one, on "Small library buildings," was read before the A. L. A. at the Lake George meeting of 1885 (*L. j.* 10: 250-256). His other writings elaborate his well-sustained and progressive views regarding book storage and large libraries.

A careful and comprehensive study of "Library shelving," by Melvil Dewey, with illustrative diagrams, appeared in *Library Notes* (No. 6) 2: 95-122, September, 1887, and as such is worthy of note, though others may not adopt all his conclusions.

**Height.**—Without going into many details, it may now be said that the weight of experience and best practice favors shelving all books within reach of an average person standing on the floor, or at an extreme height of 7 feet 6 inches to 8 feet. This is true whether for stack construction, wall cases, or open ranges in high rooms. In the latter case the part of the room above the shelving, and not otherwise used, gives access to light and air, which is more essential than utilizing the same space for books.



As instanced in recent construction, however, some librarians deem it wise to carry the shelving up to 8 feet 6 inches, or even 9 feet, with a view to having one or two more rows of shelves all over the library for future needs. While the extra high shelves need not be used at the outset, they can, by means of bracket steps and handles on the up-rights be readily reached and utilized when pressure for space makes it necessary. Others having equal or more experience in the use of such accessories do not favor them nor find them as convenient in practice as in theory. Especially is this true where women or boy assistants are concerned, some physicians strongly deprecating the use of such steps by women.

**Form.**—Using wall surface only is wasteful; on the contrary, book-cases of double face approached by aisles on either side give a maximum capacity for a given floor area. Center partitions are unnecessary and better omitted in such cases, while the shelves can be made movable at little, if any, more cost than if all are fixed. If, for special reasons of local construction or to provide for future carrying strength, some shelves must be fixed, let it be merely those at top and bottom and one other at a height of say 3 feet from the floor with all intermediate shelves adjustable.

**Dimensions.**—Little difficulty need be had in deciding on some uniform multiple of shelf length for use in a given instance, thus having a standard shelf all through the library. Such length when not less than 2 feet 6 inches nor more than 3 feet is found to be best both as regards convenient handling and interchangeability and for an economical cutting of material. Preferably a medium length of 2 feet and 8 or 9 inches will divide up space with good effect. The advantages to be derived from the adoption of such a standard length are many.

For most books which circulate, 7 to 7½ inches gives ample width of shelf; and if the shelves are placed at due intervals of height, say 9 to 10½ inches, provision is made for fully 90 to 95 per cent of the books in modern public libraries, together with ample space for air and light and moderate freedom from dust.<sup>1</sup> A limited amount of adjustable wall shelving 12 inches wide will accommodate the exceptional sized works which circulate.

For reference works, cases having a fixed ledge at say 3 feet from the floor are desirable, and may be of either wall or double-faced construc-

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<sup>1</sup>Exhaustive study in the library school for several years has led to the wide adoption of 75 centimeters, or 30 inches, as the best standard length for ordinary shelves, and 93 centimeters or 36½ inches for shelves likely to be used for standard-size files and pigeon-hole cases. The A. L. A. fifteen years ago adopted a standard-size scale by which 25 centimeters is the largest book marked 8<sup>o</sup> or O. The result is of course the adoption of 10 inches as the standard minimum distance between shelves. The ledge suits the average reader best when placed above the three lower 10-inch shelves, and if there are five more shelves above the ledge, the total height of the case is 7 feet 8 inches. Protracted experiments by the library school have failed to find better standards than the above.—M. D.

tion. If wall cases are adopted, make the upper shelves each about 10 inches and those below the ledge 15 to 18 inches wide; and the latter, at least, will prove more convenient if made adjustable. If the reference cases are double-faced and approachable from either side, the shelves may serve full as well if respectively 2 or 3 inches narrower than those against the wall—i. e., 8 inches for those above and 12 to 15 inches for those below the ledge.

Need for special cabinets and lockers for rarities and works beyond common size will vary. Rollers, sliding shelves, and revolving tables should be used for art and other large books specially exposed to injury. Avoid doors, if possible; or, otherwise, if absolutely required, use wire screens or grating rather than glass. Hard woods give best results in shelf and case construction, but the shelves may be of pine for sake of lightness. The edges of all shelves should be rounded; and finally an oil-rubbed finish used instead of paint, shellac, or mere varnish alone.

**Storage.**—As regards storage in stacks having superimposed cases with floors over each tier, or, on the contrary, shelving in ranges of cases but one tier high in open rooms having ample light and air-space above, much has been said and plausible arguments can be given on either side. The seeming weight of opinion, all things considered, is against the stack-room system, despite its compact warehouse facilities for large collections of books.<sup>1</sup>

If the most recent views regarding open shelves for all are correct and prove to be in the true line of library progress, (as the writer and many others fully believe), a combination of the double-facing open ranges on one floor with the old-time alcove form seems quite likely to prevail in the immediate future; but, as frequently happens in all matters of library economy, local circumstances exert a determining influence on individual practice. Therefore much depends on who goes to the shelves as well as on the ground space at command; while economy and convenience in service, and in heating and lighting, must be provided for as well as book capacity.

As a general principle galleries are to be avoided as a device of the evil one, equally ruinous and destructive both to human life and that of the books. In exceptional cases, however, an essential purpose can be attained only by the use of a gallery; but experience does not favor such use except under cogent necessity. If in original construction open-room storage is provided, with high ceilings and cases extending but part way (say 7 to 8 feet), and future necessities absolutely require use of the upper space, then let the cases be floored over, and the semistories thus made used as independent floors.

In stack-room construction opinions as to solid or perforated floors do not agree; but latest experience seems to concur in favor of solid

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<sup>1</sup>Many leading librarians are equally confident that the great growth in the use of stacks in recent years is based on satisfactory reasons.—M. D.

ones, with ventilation at the ends of cases and possibly along the front edges also.

Windows at the ends of cross aisles are the most practical daylight reliance and are sufficient for a reasonable width of building having adequate space in the aisles. Skylights are of little value, and prove both troublesome and injurious.

For stacks, as for other library shelving, wood seems really the preferable material, all things considered. A possible exception may be made for floors, which may be stronger, tighter, and more fireproof, if of iron. As to first cost, iron is usually though not always more expensive. Wooden uprights and shelves are generally cheaper than iron; and, in turn, admit of better construction and finish, besides looking better and wearing the bindings less.

There are a number of special shelving devices on the market, mostly patented, and amply urged by those interested; but time has yet to prove their real efficiency, and the item of first cost still stands largely in the way of very general trial of most of them.

#### COUNTERS AND DELIVERY DESKS.

These are usually made to correspond to the features of the particular building, and personal preference may be allowed sway in the style and interior arrangement of such articles.

Conforming to average humanity and kindred uses, as in banks, railroad and other public offices, counters where customers are to be served standing are most convenient when 42 inches high; this height, too, is easy for writing. The same result may be attained by a counter 3 feet high having a desk of 6 inches more superimposed. If to be used sitting, then 2 feet 6 inches is an average most convenient height, as for tables and office desks. A counter top should be of fair width, say 2 feet or more, and project considerably on each side beyond the support, thus serving to protect the front from being marred by feet, and also making it feasible for clerks inside to sit down.

Good light at counters and delivery desks, both daylight and artificial, is an essential often overlooked.

#### TABLES AND READING DESKS.

For library service the less that architects and furniture designers of the "high art" order have to do with tables, desks, and chairs the happier is apt to be the result to the steady users of such furnishings.

**Tables.**—A substantial construction, plain rather than ornate, and not too large or heavy should be the rule. From 29 to 30 inches<sup>1</sup> is a standard height, and casters are not desirable. With a top of 2 feet 10

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<sup>1</sup>Tall people can not sit with comfort at a 29-inch table, and the length from knee to floor can not be reduced; but it is easily increased by a hassock for short readers who use a higher chair. Some libraries which study comfort most adopt 31 inches as standard height and then have adjustable chairs and hassocks so that short and tall readers are both suited.—M. D.



inches by 5 feet, six persons, two on each side and one at each end, may be seated without crowding. If 6 feet long it will admit of putting three at each side, while for proportion's sake the width may be 3 feet. Slides (or movable shelves), under the top, placed at suitable intervals, are often of great service. For smaller tables, those 2 feet 6 inches by 3 feet 6 inches, and also others 3 feet square on top, prove convenient.

In rooms for juveniles it may be desirable to make some tables of less than standard height, but usually a variation in the chairs accomplishes the same object.<sup>1</sup>

**Reading desks.**—Reading desks, as distinguished from tables, are more generally made for special instances and are presumably fixed rather than movable. Like counters, therefore, they should harmonize with the finish of the building and fit the space at command. Dimensions and heights should be proportioned to the probable users, as before suggested.

**Office and cataloger's desks.**—These may be made to order, but at present a perfection of style and convenience, at moderate cost, is found in many regularly on the market, so that a suitable supply is most simple and readily attained.<sup>2</sup>

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<sup>1</sup>Foot rests or hassocks ought to be provided, as it is cruel and injurious for a child to sit for hours with feet dangling above the floor.—M. D.

<sup>2</sup>Much of the cooperative work which has accomplished so much in the past seventeen years is due to adoption of certain standard sizes for cards, sheets, blanks, and for cases, trays, drawers, and pigeonholes in which they are used or filed. It is a period of unprecedented growth in libraries and as a result there has been a change of rooms, methods, and fittings to meet the new and larger requirements. Convenience and economy make it as important to work by standard sizes as it is in a factory. It adds nothing to first cost, but saves time and money at every readjustment, because the parts often interchange in ways entirely unforeseen at the outset. Those who have tested the principle urge its adoption most earnestly.

Much is accomplished by adopting a series of standard sizes for an individual library, but much more is gained without added cost if the standards most widely used by other libraries are taken without change, omitting any not needed and supplying in the very rare cases where some not in the list are really required. Nine times out of ten, one who can free himself from prejudice will find that the standard size nearest what he has in mind is really just as satisfactory as the odd one to which he inclines simply because he has become accustomed to it for that use. The cooperation committee studied this question at its first appointment in 1876 and its work has been kept up by the library school. For many years certain standard sizes have been widely used without change and are much the safest series to adopt, both because of their wide adoption by others and more for their merit as representing so much experiment and experience. These are, for slips, cards, and blanks, V (visiting-card size), 5 by 7<sup>5</sup> cm.; P (postal-card size), 7<sup>5</sup> by 12<sup>5</sup> cm.; N (note), 12<sup>5</sup> by 20 cm.; L (letter), 20 by 25 cm.

The standards most used are P and L. V is used for call slips and compact indexes where little goes on the card. C (check size, 2<sup>5</sup> by 5 cm., or just one-third V) is used for coat checks, tags, labels, etc. R (receipt, 7<sup>5</sup> by 20 cm.), four V's together, is used for receipts, bank checks, drafts, and fits pockets, envelopes, etc., that hold bank bills. Half this length, or two V's (7<sup>5</sup> by 10 cm.), is used for catalog or index cards for commercial and other work in which, instead of book titles,

**Chairs.**—Much the same is true regarding chairs as of office desks. Yet for fairly good appearance, durability, and average comfort, probably the well-known bent-wood chairs are preferable. The foreign chair is stronger and of better finish, but the American make is good and its rattan seats often prove more satisfactory than those imported. Some patterns of simple dining-room chairs have also been found quite satisfactory and serviceable. Wire hat racks placed beneath the chairs at small cost serve a good purpose.

For consulting printed catalogs and lists in the delivery room, a counter top or ledge of table height, provided with round-top store stools, fastened to the floor at needed intervals, is a convenience.

**Umbrella stands and hat racks.**—For the former no really satisfactory article is regularly "in the trade" of either furniture or hardware dealers; nor are the usual combined hat and umbrella stands for hallways in residences satisfactory for libraries.

For limited use the foreign made "bent-wood" stands or trees, with drip pan on the floor, are convenient and ornamental, without being very expensive. Such, with hat holders beneath the chairs, provide moderate accommodation without annoying frequenters of the library or being much in their way.

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short entries are made, for which 10 cm. give ample length. In the same way I (index) size (5 by 12<sup>5</sup> cm.) was largely used for book titles, though of late years very few libraries adopt it, as all cooperative cataloging is based on P size, which experience has shown to be much better in most cases.

L size is the largest that goes on the standard shelf, of which it represents a section 2 cm. high and 20 wide. For blank books, letter heads, office forms, manuscript for printer, and nearly all uses, this size or something very near it seems to have been independently evolved in all sections as most convenient. For printed books it is modified to M (magazine size, 17<sup>5</sup> by 25 cm.), so largely adopted by magazines. This is the largest book that goes on standard shelves. Trimming by binder equals squares of boards, so that the bound copy is the same height as the paper. This is also a favorite size for library catalog and bulletins.

The sizes have from the first been given in the international or metric measures, which should be followed instead of the rough equivalents in inches, as the difference between a card 7<sup>5</sup> cm. high and 3 inches is  $\frac{1}{8}$  of an inch or just enough to prevent proper handling of the card catalog. On this account it is unsafe to use catalog cards made by ordinary stationers or paper dealers. Their method of cutting usually results in variations of 1 mm., or one twenty-fifth of an inch. If a card 1 mm. lower comes between two of proper height, the finger in turning will bridge from No. 1 to No. 3 and No. 2 will be skipped. Novices not understanding this sometimes make costly mistakes by failing to get accurately cut cards, which cost much more.

For pigeonholes and small cases that stand on shelves, 25 cm., or the same as the shelf, is the standard height. For taller cases the height of two or three shelves is taken, when the thickness of the shelf removed may be added. As to length of shelves to hold cases, the 75-centimeter shelf, which is best for mere storage of books, is much less convenient as a common multiple of the boxes most used for standard size than is 93 cm., or 36 $\frac{3}{8}$  inches. It is wise, therefore, to use the 93-centimeter shelf instead of the 75-centimeter in the librarian's room, near the loan desk, and in corners and other places where desks are apt to be placed, or for other reasons where these conveniences may be in demand.—M. D.

For extreme cases and large constituencies, articles of the kind must be specially designed.<sup>1</sup>

#### CARPETS.

Best quality tile or inlaid linoleum (a sort of semicork article firmly pressed together), in which the figure of the pattern is carried through the entire thickness of the fabric, is probably the one most durable floor covering to be had at moderate cost. It is tolerably noiseless and when properly laid stands long wear and continual cleaning without becoming unduly shabby. "Corticine" and other names describe a kindred article; but under either name, figured patterns show dust less than solid colors. The lighter the tint, also, the more pleasing is its effect and the less it shows dirt. Number 1 (or "A"), printed linoleum is a cheaper grade, in which the pattern is on the surface only, and will answer where there is not too much wear.

Brussels carpet can be had at no more, or perhaps less, first cost, but wears out sooner, and all carpets are so troublesome as regards dust, moths, etc., besides needing to be frequently taken up and beaten, that it is well to avoid them.

Matings of all kinds are very objectionable except for express use as dirt catchers in passageways and aisles, where they can be frequently removed and cleaned.

#### READING ROOM FITTINGS.

Tables and chairs for readers have been already touched on. Some provision must be made for reading current periodicals. Happily the day has gone by for secluding all such behind counters, to be handed out only on individual call, one by one. An exception, however, may possibly be necessary in some larger cities owing to mixed population and the influx of a floating and tramp element. Otherwise the several monthlies and weeklies kept on file may be put in suitable binders, or temporary covers, and displayed either in racks or on tables having partitioned intervals or compartment tops; or else in bins or pigeon-holes in numbered or labeled cases. Such methods work well and must be determined by the room at command and the constituency to be served.

For newspapers, if such are supplied for reading, still different treatment may be needed. For display on wall racks, to be read in place only, there is demanded a disproportionately large standing or sitting

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<sup>1</sup> After much unsatisfactory experimenting we found a cheap device called the "Midget" best. It consists of two rings 3.5 cm. in diameter attached to a metal base, screwed on the baseboard or any piece of furniture. It could be attached to a chair leg. A little drip cup 4 by 5 cm. and 4 cm. deep hooks on this so that this tiny attachment, which is hardly noticed when not in use, holds two umbrellas out from the wall or furniture, the ring 11 cm. above the cup holding the umbrella in position. It may also be used for canes. Its chief merit is that it takes no room.



area. If in hand files they soon grow inconvenient and unsightly; and if in pigeon holes or on call only, they require much care and attention or else disappear too early. There is doubt whether the function of a public library is more than to obtain and carefully file away for permanent binding all local papers, without maintaining the average public newspaper reading room in this age of overwhelming numbers of cheap publications of that kind and the lack of much, if any, benefit to their readers.

#### SPECIAL APPLIANCES.

**Bulletin boards.**—Almost every library finds desirable a bulletin board or place for notices. Many make quite a feature of posting lists of new books, query lists, and special reading notes, etc. Considerable ingenuity may be exercised in such matters from the simple slate or blackboard, or tack-sheets of paper, up to an equipment of clips and grooved slats in which slips or cards can be placed and removed as desired.

**Pamphlet boxes.**—Preservation of and ready access to pamphlets has likewise made demand for special accommodations akin to those given books. Various styles of boxes and wrappers have been tried, and satisfaction with any one kind, if attained, has depended much on the disposition of the individual user. Where expense and lack of space do not stand in the way it is probable that most pleasing results are had by means of file boxes or drawers, each fitted with a "follower" or "compressor," as in the well-known Woodruff and other document files, but made of larger sizes for library purposes.

For dictionaries, atlases, and like bulky works, liberal provision of special holders and revolving cases prove both an economy to the library and an aid to users.

**Indicators.**—Our English and Canadian conferees find more or less use for the indicator, and deem it a praiseworthy adjunct to an active circulation. Though occasionally tried in the United States our people do not usually take kindly to the indicator on either side the delivery counter. To most libraries, therefore, the term conveys but a vague idea of a machine about which few know and which fewer care to use. The space necessarily occupied by an indicator is probably one of the greatest drawbacks to its use, if its first cost and expense of operation might otherwise be afforded.

**Book trucks.**—Some form of book truck is one of the most indispensable equipments of a modern library, and much true economy will result from an ample supply, even if the first cost seems large. Made to meet a limited demand and not in quantities, the usual price is not unreasonable, and represents more actual cost and less profit than more widely used goods.

**Catalogue cases.**—As to catalogue cases and kindred fittings, wherein we now have a tolerable uniformity, the rule that "the best is

the cheapest" holds true in nearly all particulars. To find the best of those now made is fortunately not difficult, and in procuring such the buyer also obtains the result of an aggregate amount of contributed library experience not measured by dollars and cents.

Much more might doubtless be said on all the foregoing topics and on many which have been unnamed.

Such treatment, however, is more in the province of an exhaustive library manual, and needs to be accompanied by numerous illustrations, which speak better than words.

### GOVERNMENT, CONSTITUTION, BY-LAWS, AND TRUSTEES.

By H. M. UTLEY, Public Librarian, Detroit.

[Facts in the four footnotes of this article are from comparative library exhibit statistics collected by New York State library.]

Character and mode of maintenance modify details of library government. Those commonly known as public libraries are usually governed by trustees.

#### BOARDS OF TRUSTEES.

**How constituted.**—The number of trustees usually varies from 3 to 9.<sup>1</sup> In a few instances there are more, but this increase is usually because other interests are to be represented, such as an individual founder or some consolidated corporation. In executive management a small board is most efficient. An odd number of trustees is advisable to avoid possibility of deadlock on any question. The municipal corporation is usually represented on the board by the mayor or president of the board of education, and sometimes by the superintendent of schools also, in order to bring the library into closer touch with the schools. Women are sometimes chosen and prove well fitted for the work.

**How chosen.**—In most cases election is by the city council. Sometimes this is on nomination of the mayor and sometimes without such nomination. Election is often by popular vote at annual school or municipal elections. In a few cases the matter is in the hands of the board of education, who select trustees outside their own body. This happens where school libraries have become public libraries. The common practice of choice by city council or by people accords with the idea of local self-government and is satisfactory.<sup>2</sup>

**Term of office.**—The trustees are usually divided into groups, one group retiring each year. The most common term is three years. A

<sup>1</sup>Of 63 representative libraries reporting, 18 have 9 trustees; 11 have 6; 9 have 5. Small boards are generally the best working bodies.

<sup>2</sup>Of 64 libraries reporting, trustees of 37 are appointed by mayor, by common council, or by mayor and council; trustees of 16 are elected by the people. One library reports a self-perpetuating board. The tendency in Western States is for common council to appoint directly or on mayor's nomination.

board of 6 or 9 elected members, 2 or 3 respectively, retiring annually, is most popular. In practice there is more diversity in length of term than in other respects. There are some advantages in a long term if the incumbent is a desirable one. Experience and familiarity with the working and needs of the institution are useful here as elsewhere. But if the term is short, a valuable member may be reelected and kept in the board, while a listless or too officious member may be succeeded by some better person.<sup>1</sup>

**Officers.**—*Treasurer:* If the city treasurer is ex officio treasurer of the library fund, the tax for supporting the library is protected by his official bond, and is conveniently drawn on from time to time as needed. This is considered the better practice, though sometimes the board elects its own treasurer and he draws from the city in a lump sum whatever appropriation has been made for the purpose.

*Secretary:* The duties of the secretary are usually signing warrants on the treasurer, keeping an account of the finances, and recording the proceedings of the board. The annual financial statement is made by him rather than the city treasurer. He is also the buying agent. In a large library this work must necessarily consume much time. Whether a person shall be specially employed or whether the duties shall be performed by a trustee or by the librarian must, therefore, depend on circumstances.

*Librarian:* The librarian should not be a member of the board. He is sometimes secretary, though opinion is divided as to whether this is best. He should attend regular board meetings for consultation regarding the affairs of the library and to give his advice on any contemplated action. The term of office varies from one to three years. In some instances the term of all appointees is indeterminate, and the argument in favor is that by producing a feeling of security in tenure of office among employees more earnest and enthusiastic work is secured, while the board may drop an unsatisfactory employee at any time. If the librarian is simply custodian of the books, no bond should be required of him. But if he is superintendent, executive officer of the board, has the management of its business affairs and handles much money, he should be treated like other persons employed in a similar capacity. In fact, instances are rare in which the librarian gives a bond. He is usually intrusted with at least a small sum of money to pay certain petty bills, such as expressage, postage, etc., and renders an account monthly of his payments, of money collected in the library from sale of catalogs, fines, etc. The treasurer's receipt of the sum accounted for should be attached to the report.

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<sup>1</sup> Thirty-three out of 61 libraries report a three-year term; 7 a two-year, 6 a four-year, 6 a five-year, 2 a six-year, 3 a seven-year, and 1 a life term.



## BY-LAWS.

Library boards are bodies corporate, hold the property and funds of the library in their own name, and have exclusive control of them. They make to the municipality an annual report, which must show the amount of money received from all sources and the purposes for which it has been expended, the number of books bought during the year, the number in the library, the extent of their use, and other facts of general interest tending to exhibit the proper discharge of the trust. These reports are published for public information. Trustees annually choose the usual list of officers from their own members. Standing committees are those on books, on administration, on reading room, on buildings and grounds, and on finance. Regular meetings are usually held once a month, but sometimes oftener and sometimes bimonthly. These meetings are open to the public, and the newspapers may publish proceedings of general interest. Accounts against the board are first passed on by the proper committee, who indorse their approval to the board, which orders a warrant on the treasurer in payment.

The committee on books has general supervision of buying books, but the librarian must look after details. The committee outlines the policy of the library, fixes the sum to be spent, and considers special purchases, but is not supposed to give attention to ordinary current literature.

The committee on administration recommends appointments, promotions, and discharges, and salaries of the library staff—presumably on consultation with the librarian—and final action on all these matters rests with the board. Civil-service rules are as important here as in any branch of the public service, if not more so. A system of competitive examination of applicants for library employment is prescribed in some libraries and is coming into vogue, to the manifest improvement in quality of library assistants.

## PUBLIC SCHOOL LIBRARIES.

These are under control of the board of education. In some cases, usually in smaller towns, though originally established for the schools, they have become practically public libraries and are still managed by the board of education, which has a committee of three or five charged with their special oversight. The committee has no authority to take final action, but appointments of librarian and other employees and expenditures of money are made by the board itself. As the library grows and its management becomes more complicated, this method of government is found cumbersome and lacking in practical efficiency. In such cases the organization of a library commission with full powers of control is the usual practice.

## COLLEGE AND PROPRIETARY LIBRARIES.

College libraries are controlled by the trustees of the college, generally with a library committee in special charge. Proprietary libraries are managed by trustees selected by the proprietors. Special libraries, such as law and medical, are similar in their management to proprietary libraries. Trusts established by private benefaction are governed by the peculiar provisions in each, and no general rules are applicable.

## STATE LIBRARIES.

In a few instances State libraries are managed by trustees; in most cases the governor appoints the librarian. There is a library committee in each house of the legislature which considers matters of proposed legislation relating to the library and specially with regard to appropriations for it, but has no power or authority in intervals between sessions. The librarian is in control in all departments, appoints his own subordinates, makes his own purchases, subject only to the law governing each case. The criticism on the gubernatorial appointment system is that the tenure of office is too uncertain. Such appointments may be controlled to a greater or less extent by political considerations, and a governor seldom continues in office longer than two or three years. An inexperienced librarian and a new staff could not be expected to accomplish very much in a short term, and even if good work were done it might be quickly undone by a successor with different ideas. Where the method of governing by trustees, organized somewhat as are those of public libraries, has been tried it has been found to work satisfactorily. Other plans tried or suggested contemplate the appointment of the librarian by the legislature or by the supreme court of the State.

Whatever tends to remove the library in all its management and operations as far as possible from partisan politics is to its advantage. This is true of all classes of libraries, not alone of those owned by States. Instances are rare in which this disturbing element has shown itself in city libraries. The remedy in such cases lies in electing as trustees men entirely above petty considerations.<sup>1</sup> Entangling alliances with religious denominations are to be avoided no less than with political parties. Bigotry and intolerance may be shown quite as offensively in one as in the other.

In another respect also care should be exercised in selecting men for library boards. It is not every "good fellow" who would make a good trustee. Other qualifications being assumed, he should be a person of good sound sense, good temper, a capacity and a willingness to work. The trustee who gives no attention to the business of his board is

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<sup>1</sup> Of 58 libraries reporting, 44 say positively that politics has no influence whatever, 7 say that it has, and 7 say that it has to some extent. All agree that the bane of public library management is partisan politics.

second only in unfitness to the one who wants to manage the whole thing himself and in his own way.

## LIBRARY SERVICE.

By FRANK P. HILL,

Librarian Free Public Library, Newark, N. J.

This paper is based on answers to the following questions from 118 out of 210 libraries written to. From other sources partial information was obtained concerning 111 other libraries.

These libraries represent all kinds and conditions; from the village library of 1,000 volumes with a yearly circulation of a few thousand to that of the Chicago public library with its yearly circulation of 2,094,094, and embrace free public, subscription, college, State, historical, reference, and special libraries.

The letter contained the following inquiries:

Name.

Address.

Number of volumes in library.

Circulation.

Librarian:

How appointed.

Term of office.

Salary.

Select books.

Appoint assistants.

Fix staff salaries.

Purchase supplies.

Make regulations.

Decide methods of classification, cataloging, and distribution.

General supervision.

Specific duties.

Hours of daily service.

Vacation.

Holidays.

First year attended American Library Association meeting.

Sent to American Library Association meeting at expense of library, or is time allowed, or both, or neither.

Staff:

How appointed.

Examinations.

Total number employed.

List of titles, with number employed in each department and average salary.

(If confidential, please so state it and the facts will not be made public.)

Changes in titles recommended.

Extra help paid by the hour or by the day.

Staff divided into departments, i. e., cataloging, registration, delivery, reference, bureau of information, slip-rack, reading room, bindery.

Meetings for consultation and improvement.

Learn work in all departments or only in one.

Graduated scale of pay, i. e., so much first three months, and so on.

Vacation.



## Staff—Continued.

Holidays.

Allowed any time on account of illness without loss of pay.

Allowed to make up time lost in other ways.

Hours of labor.

Catalogers work shorter time than other members of the staff.

Delivery clerks have time to do work other than at the delivery desk.

Employ boys or girls for runners.

Send library messenger for lost books, or is such work done by the police department.

Separate room for catalogers.

If cataloging is done in the delivery room, please state if the noise and confusion disturb the catalogers.

Any printed rules for the staff.

How many are members of the American Library Association.

Many interesting facts are gleaned from the reports received. All important details will be found in the table.

## CHIEF LIBRARIAN.

It is not within the province of this article to name the qualifications necessary to a good librarian, but rather touching all points, to show the present condition of library service.

**Selection.**—Success or failure of a library, as of a business, depends on the ability of the man or woman at its head. Only trained men and women should be in charge.

The days of local feeling in the selection of librarian and assistants are fast passing away, and cities or towns that compel trustees to engage local talent, regardless of merit, are the exception rather than the rule. In fact, to-day the demand for good librarians is beyond the supply.

The librarian should be a gentleman, a scholar, and a good executive.

"The true librarian," as Mr. Crunden says, "keeps always in advance of his community and constantly educates it to make greater demands upon him."

Politics should not be permitted to affect the appointment of trustees, librarians, or assistants; and, except most State libraries and a few city libraries controlled by common councils, there is little to complain of on this score.

**Women.**—Women have taken a high rank in the profession, not only as catalogers and assistants, but as chief librarians. Of the 508 individual members of the American Library Association 237 are women, and of this number 93 are at the head of libraries.

Only 125 libraries represented in the American Library Association have men as chief librarians.

**Term of office.**—This is usually during good behavior, though 52 librarians report yearly elections. It is manifestly in the interests of the institution that no definite time be mentioned, as it leaves the incum-

bent free to go on with his good work without interference—provided always that he retain the esteem and confidence of his superiors. Long term contracts are irksome alike to trustees and librarian. If a definite term is fixed pressure is brought to bear by those ready to take the place at its expiration. Good behavior and good work should form the only basis for continuance in office.

**Duties.**—The librarian as the responsible head of the institution should be consulted in all matters relating to its management and efficiency and as to plans for new buildings. The most satisfactory results are obtained in those libraries where the chief librarian is permitted to appoint assistants, select books, buy supplies, make regulations, decide methods of cataloging, classifying, and lending, subject of course to the approval of the trustees.

In 68 libraries such responsibility is placed virtually on the librarian; while only 16 report that the whole matter is in charge of committees, the librarian being merely their mouthpiece. To do this work calls for a man of parts. He must have a wide acquaintance with books and literature, and show good judgment in selecting his staff. In a word, he must be capable of managing the business as well as the literary side of the library.

The question of making the librarian secretary of the board of trustees is perhaps a delicate one. Against the proposal it is urged: (1) That such duties entail additional labor on the librarian; (2) that trustees feel freer to discuss the librarian and his management when he is absent.

In answer it may be said:

1. That the additional labor is very slight, for in many libraries where the secretary is a trustee the records are written up by some one connected with the library.

2. That whenever necessary to discuss the methods of the librarian and his staff, he could be requested to withdraw.

All concede that the librarian should be present at board meetings for consultation and advice, and that no important action should be taken without first consulting him. The tendency certainly is toward making him secretary of the board. All libraries in New Jersey established under the law of 1884 are obliged to do this.

The plan is a good one, for as secretary the librarian keeps the minutes, audits bills, and attends to everything pertaining to the office. He is thus brought into closer relations with the trustees, and it gives both an opportunity to study the library's needs more carefully than in any other way. Such is the verdict of those who have tried both methods.

**Hours of service.**—The average daily service appears to be about eight hours. This average is obtained by including a few librarians who report only five hours' service and quite a number whose time extends to ten hours per day.

No account is taken of library work done outside office hours. Should this be considered, it would be found that every librarian having the interests of his institution at heart puts nearly all his waking hours into the work.

One of the most important duties is to attend the annual gathering of the American Library Association. Many a young librarian has here first imbibed that enthusiasm which has enabled him to battle with doubt and come out victor.

Some 34 libraries regularly send representatives at the expense and on the time of the library; 12 libraries report that time but not money is allowed.

It may truthfully be said that the money spent by a library in paying its librarian's expenses for attending these conferences is an investment giving the greatest possible interest. Its value can not be computed in dollars and cents.

**Vacation.**—This is as welcome and as necessary to the librarian as to the school principal. Some librarians are obliged to take their vacation at the time of the American Library Association meeting. This is not recommended. Anyone who has attended an American Library Association conference knows that means simply a repetition of library work wonderfully intensified. There is little or no rest for the enthusiastic individual at these gatherings, because he is bound to get all new ideas and all possible information from his brethren. The only satisfactory vacation is to drop all thought of the library and hie away to some quiet spot offering rest and change of scene. A few days of such exemption from library cares and worry benefit alike trustees, public, staff, and librarian.

To the librarian is usually given a little more time than to the assistants. In public libraries four weeks is a fair allowance; in college libraries vacations correspond with the regular college vacations—about three months.

Where libraries are open Sundays and holidays the librarian is not usually in attendance, but the assistant in charge receives double pay for such services.

#### STAFF.

**Requisites.**—At the Round Island American Library Association meeting in 1887 Mr. James Yates, of Leeds, England, laid great stress on the necessity of giving the chief librarian full control over his staff, illustrating his point by taking an ordinary workshop where “the employer is bound in his own interests to see that his employees are provided with true and good work tools, and that when they flinch they must be replaced.”

Peter Cowell, chief librarian of the Liverpool public libraries, in his pamphlet on public library staffs, says:

It is an absolute necessity that the staff should be characterized by ability, energy, and appreciation of their duties, for otherwise a lack of vitality would soon be appar-



ent in the library, and a corresponding deficiency in its usefulness and popularity. When the staff of a library is imbued with a common spirit, and that spirit is identified with the true aims and purposes of a public library, it follows that such a library will soon be engaged in a great and important educational work, and in exercising a wide and beneficial influence.

Harmony, then, as well as fitness, plays an important part in the success of a library. It is unfortunately true that where many women are gathered together—for pleasure or business—there you will find cliques and jealousies. Particularly is this true in a library where wages are paid according to the duties performed.

The catalogers and reference librarians are paid better than the delivery clerks and copyists. What might be called “class friendships” are formed, wherein those of a higher grade look down on those of a lower, and, as sometimes occurs, do not want to associate with or do the work of the other. If allowed to remain such a spirit breeds continual dissension. Pluck it out at once, even at the cost of hard feeling. When self is cast aside and all are working for the common good the result is pleasing alike to the public, the trustees, and the staff. The members of the staff should keep in touch with each other as well as with all departments of the library. Good feelings produce good results. It is an excellent idea to bring the staff together (outside of library hours) to discuss library matters; and better still to meet socially on an occasional winter evening. Mr. Whitney says “a library may be compared to a watch, each part in which depends on the proper action of the other, and where poor work in the least member affects the whole.” Great care then is necessary in the selection of the individual members.

**Appointment.**—Of 229 libraries reporting, only 17 state that appointments are made on the result of written examinations, but the consensus of opinion at the Chicago meeting decidedly favored such examinations. A preliminary examination serves two purposes:

1. It enables the committee to ascertain the acquirements of the candidate.
2. It does away with all political influence.

A candidate and his friends, finding that an examination is necessary before appointment will be made, hunt for some more congenial employment. It certainly eliminates undesirable aspirants and leaves trustees free from outside influence.

Such examination need not be severe. Grammar, history, and literature should be included, special attention being paid to writing and spelling. It does not follow that because one has obtained the required percentage he will make a good assistant; on the other hand, in my own library, for instance, it sometimes happens that an individual who has barely passed proves the best adapted to the particular work required. The written examination should be followed by “trial work” in the practical details of the library, after which a selection can be wisely made.

It is much easier to get a person on than to get one off the staff. At the Buffalo conference, in 1883, the following resolutions were adopted:

*Resolved*, That efficiency in library administration can best be obtained through the applications of the cardinal principles of an enlightened civil service, viz, the absolute exclusion of all political and personal influence; appointment for definitely ascertained fitness; promotion for merit, and retention during good behavior; and

*Resolved*, That, in the opinion of this association, in large public libraries, subordinate employees should, so far as possible, be selected by competitive examination, followed by a probationary term.

When competent service can be secured for subordinate positions, preference should be given to local applicants.

As between local influence and competent service no bar should hinder the selection of the person best qualified for the work.

The establishment of the library school at Albany and of training classes<sup>1</sup> at Pratt Institute, Brooklyn, and Drexel Institute, Philadelphia, makes it possible to procure the best material at a fair price. There is no longer excuse for securing incompetent service.

**Titles.**—Beyond that of "first assistant" it is not safe to recommend titles for the various heads of departments. No list that could be prepared would suit the different kinds of librarians or even the different sections of the country; therefore, each library must regulate the matter to suit local demands.<sup>2</sup>

**Departments.**—To a limited extent all libraries are divided into departments, but it does not follow that each department has a separate head.

In small libraries the force should learn work in all departments; and even in many large libraries it is better for members of the staff to change work occasionally, i. e., the catalogers work certain hours in the day at cataloging and then change to delivery work, etc. Sixteen libraries report that it is customary for the staff to learn the work of only one department, except in cases of promotion. It is better that assistants should understand all departments of the library, in order that satisfactory promotions may be made.

It was the general opinion at the Chicago conference that better work would be accomplished by catalogers if a separate room were provided. The library proper is no place for such a department, for the noise and confusion at the delivery desk distract the mind. For the best cataloging, quiet and seclusion are prime requisites.

<sup>1</sup>October 1, 1893, at the Armour Institute, Chicago, a third class was opened, in charge, like both the others, of a graduate of the library school.—M. D.

<sup>2</sup>Americans are beginning to use the better form, common in England, of "public librarian" instead of "librarian of the public library of," and "of sublibrarian," "subcataloger," "classifier," etc., instead of the longer "assistant librarian," "assistant cataloger," etc. "Clerk in charge of the shelf-list department," and similar infelicitous titles, are giving way to short descriptive titles like "shelf-lister," "accession clerk," "loan clerk," "indexer," "reference librarian." Also "page" is better than "messenger," "director" than "superintendent."—M. D.

Girls 14 to 16 years of age do better work as runners than boys, and are more easily managed.

When possible the police department should be utilized in recovering books from persistent delinquents. Only a few of the larger libraries employ a special messenger for this purpose.

**Daily service.**—Returns show a reduction within a few years in the average library day from 8½ to 7½ hours. It would be interesting to know if the reduction has resulted in better work. With others I am inclined to believe so, but the claim can not be proved. In two libraries, catalogers work longer than employees in other departments. There seems to be no good reason why this should be so; as a matter of fact, cataloging is not only more trying and more worrisome, but it requires better mental caliber than does the delivery desk.

By a vote of 4 to 1 the association decided that owing to the nature of their work catalogers ought to have shorter rather than longer hours.

Generally speaking, the smaller the library the longer the hours of service.<sup>1</sup>

**Vacation.**—A fair average for vacation is about three weeks, and to this is added (by a very few libraries) an extra ten days during the winter—a boon appreciated by the favored ones. Some large libraries also allow absence not exceeding twenty days during the year for illness. Most boards of trustees, however, do not deduct from pay for absence on account of illness.<sup>2</sup>

**Time record.**—In large libraries some check is necessary to prevent tardiness. As at school some pupils are pretty certain to be late unless punishment is meted out, so among library employees the same fault occurs unless means are taken to prevent it.

A simple and effective method is to provide a book of loosely-bound sheets, each sheet headed with the name of an employee, who records

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<sup>1</sup> This is because the small library usually starts with false notions of the work. The larger libraries have gained experience which teaches that better results can be attained by adopting, not a mechanical system, but hours suitable to individual work. This average of seven and a half is found by including many libraries that still exact unreasonable hours. It will doubtless grow still smaller as the lessons of experience are more carefully studied.—M. D.

<sup>2</sup> A theory justifying this payment for services not rendered is that, rather than have lost time deducted, some employees will come to the library when their health and future best work require them to be at home or in bed. But, on the other hand, it is well known that, oftener, if as much salary will be drawn by staying at home, many will skip days when they might better be on duty. Absolute fairness requires that those who do not exhaust their allowance for illness during the year may add the time to the annual vacation, and this resolves itself into the direct businesslike method of giving a liberal allowance, say six weeks (or half the teacher's usual vacation) for vacation and illness, and deducting for any absence for whatever cause beyond this. However much the librarian may sympathize with a deserving assistant in poor health, he has no right to dispense the taxpayers' money in charity, however worthily bestowed.—M. D.



in ink the time of arrival and departure; and at the end of the year the book holds a truthful record of attendance. I say truthful, because I believe that if each member of the staff is placed on honor and allowed to make his own entry, rather than report to some superior, there will be no intentional errors.<sup>1</sup>

**Salaries.**<sup>2</sup>—"The laborer is worthy of his hire." The following resolution, adopted by the American Library Association at its meeting in Chicago, represents the ideal rather than the real condition of librarians and assistants:

*Resolved*, That in the opinion of the American Library Association the qualifications and salaries of library assistants in important positions should be on a par with high school teachers; that applicants for positions in libraries should have at least a high school education; and that the heads of large libraries should have salaries not less than those of public school superintendents in the same cities.

Usually, salaries are much lower than those of teachers and school principals, and with no apparent reason for the difference, unless it be the successful efforts of some librarians to conceal their salary lists. In a table such as that appended to this report it is impossible to include a complete list of employees; therefore the amounts received by the librarian and first assistant only are given.

The effect of such publicity ought to be beneficial to the profession, encouraging those on low salaries to ask their trustees for increase, and enabling trustees, without fear of criticism, to make such a fair increase as will place their institutions on a level with others in more favored localities.

There need be no fear that a board, on finding that it is paying higher salaries than those in another city of corresponding size and wealth, will attempt to cut down salaries, for it is easier to have salaries increased than decreased. As each community has its own local conditions it is not possible to lay down a hard and fast rule for salaries.

From 170 reports we find the average yearly salary \$1,364 for chief librarians; \$642 for first assistants, and \$375 for general assistants. These averages are low, but the tendency is upward.

Payment by the hour is resorted to by a few libraries, but the practice is not recommended, as it has proved impossible to arrange a satisfactory schedule; though substitutes are engaged by the hour.

For Sunday and holiday work it is customary to allow double pay.

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<sup>1</sup>The best method of recording time, now coming into wide use is by an attachment to a clock by which the exact minute of coming and going is recorded mechanically. It is much quicker and cheaper, but its great advantage is in eliminating all question of personal accuracy in the record made by an assistant or a recording clerk.

<sup>2</sup>See full discussion in A. L. A. proceedings, 1893, pp. 34-37, 41-42.

## SUMMARY.

(1) Politics should not enter into the appointment of trustees, librarians, or assistants.

(2) Only trained men and women should be placed at the head of libraries.

(3) The better the material selected, the more satisfactory will be the administration of the institution.

(4) In cities and towns where he is held responsible for the conduct of the library, the librarian should have the appointment of all assistants and other employees.

(5) Term of office should be during good behavior.

(6) Every library should be a member of the American Library Association, and should be represented at all its meetings.

(7) Catalogers should have shorter hours than other library workers, and should have a separate room.

(8) Applicants for library positions should have at least a high school education.

(9) Applicants should be required to pass written examinations before being appointed.

(10) Assistants should learn to do work in all departments.

(11) Seven to eight hours constitute a good day's work.

(12) Library assistants should have four weeks' vacation during the year.

(13) Qualifications and salaries of library assistants in important positions should be on a par with high school teachers.

(14) Heads of large libraries should have salaries not less than those of public school superintendents in the same cities.

(15) Library salaries ought to be published.

Place.	Name of library.	Free or sub- scription.	Class.	Number of volumes.	Population.
Akron, Ohio .....	Bierce <sup>1</sup> .....	S .....	Col .....	6,524	27,702
Do .....	Public .....	F .....	Gen .....	11,200	27,702
Albany, N. Y. ....	New York State .....	F .....	Gen .....	157,114	94,640
Allegheny, Pa. ....	Carnegie free .....	F .....	Gen .....	22,232	104,967
Amherst, Mass. ....	Amherst College .....	F .....	Col .....	59,000	4,512
Andover, Mass. ....	Andover Theological Seminary .....	F .....	Theol. ..	48,763	6,129
Ann Arbor, Mich. ....	University of Michigan .....	F .....	Col .....	77,705	9,509
Appleton, Wis. ....	Lawrence University .....	F .....	Col .....	12,638	11,825
Arlington, Mass. ....	Robbins .....	F .....	Gen .....	12,183	5,629
Auburn, N. Y. ....	Seymour .....	S .....	Gen .....	11,285	25,887
Augusta, Me. ....	Maine State .....	F .....	State ..	40,000	10,521
Aurora, N. Y. ....	Wells College .....	F .....	Col .....	3,070	3,266
Ayer, Mass. ....	Public .....	F .....	Gen .....	5,511	2,148
Baltimore, Md. ....	City .....	F .....	Gen .....	23,641	433,547
Do .....	Enoch Pratt free .....	F .....	Gen .....	122,773	433,547
Do .....	Mercantile .....	S .....	Mer .....	40,000	433,547
Do .....	Peabody Institute .....	F .....	Gen .....	112,000	433,547
Bangor, Me. ....	Public .....	F. & S. ....	Gen .....	33,487	19,090
Batavia, N. Y. ....	Union school .....	F .....	Sch. ....	10,000	7,200
Bay City, Mich. ....	Public .....	F .....	Gen .....	13,918	27,836
Berkeley, Cal. ....	University of California .....	F .....	Col .....	48,287	5,101
Beverly, Mass. ....	Public .....	F .....	Gen .....	13,347	10,795
Bloomington, Ind. ....	Indiana University .....	S .....	Col .....	14,684	22,242
Boston, Mass. ....	Athenaeum .....	S .....	Gen .....	177,000	446,507
Do .....	Institute of Technology .....	F .....	Sci .....	22,788	446,507
Do .....	Public .....	F .....	Gen .....	576,237	446,507
Boulder, Colo. ....	Buckingham .....	F .....	Col .....	7,900	3,330
Braddock, Pa. ....	Carnegie free .....	F .....	Gen .....	.....	8,561
Bridgeport, Conn. ....	Public .....	F .....	Gen .....	22,785	48,856
Bristol, R. I. ....	Rogers free .....	F .....	Gen .....	11,046	5,478
Brockton, Mass. ....	Public .....	F .....	Gen .....	17,861	27,278
Brookline, Mass. ....	do .....	F .....	Gen .....	39,007	12,076
Brooklyn, N. Y. ....	Brooklyn .....	S .....	Gen .....	117,669	804,377
Do .....	Pratt Institute .....	F .....	Gen .....	40,000	804,377
Do .....	Y. M. C. A. ....	S .....	Y. M. C. A. ....	12,600	804,377
Brunswick, Me. ....	Broidoin College .....	F .....	Col .....	50,000	6,012
Bryn Mawr, Pa. ....	Bryn Mawr College .....	F .....	Col .....	9,760	.....
Buffalo, N. Y. ....	Buffalo .....	F .....	Gen .....	70,483	254,457
Do .....	Grosvenor public .....	F .....	Gen .....	35,000	254,457
Burlington, Vt. ....	Fletcher free .....	F .....	Gen .....	25,000	14,566
Do .....	University of Vermont .....	S .....	Col .....	43,374	14,566
Butte City, Mont. ....	Butte free public .....	F .....	Gen .....	16,000	10,701
Cambridge, Mass. ....	Harvard University .....	F .....	Col .....	292,000	69,837
Do .....	Public .....	F .....	Gen .....	36,643	69,837
Charlottesville, Va. ....	University of Virginia .....	F .....	Col .....	45,000	5,591
Chelsea, Mass. ....	Fitz public .....	F .....	Gen .....	13,619	27,850
Chicago, Ill. ....	Newberry .....	F .....	Gen .....	79,000	1,098,576
Do .....	Public .....	F .....	Gen .....	139,350	1,098,576
Do .....	University of Chicago .....	F .....	Col .....	330,000	1,098,576
Cincinnati, Ohio. ....	Public .....	F .....	Gen .....	156,673	296,309
Do .....	Young Men's Mercantile .....	S .....	Mer .....	60,000	296,309
Cleveland, Ohio. ....	Case .....	S .....	Gen .....	30,000	261,546
Do .....	Public .....	F .....	Gen .....	72,078	261,546
Clinton, Mass. ....	Bigelow free public .....	F .....	Gen .....	18,463	10,379
Clinton, N. Y. ....	Hamilton College .....	F .....	Col .....	35,000	1,750
Columbus, Ohio. ....	Public .....	F .....	Gen .....	14,064	90,398
Concord, N. H. ....	do .....	F .....	Gen .....	18,500	16,948
Danville, Pa. ....	Thomas Beaver free .....	F .....	Gen .....	8,523	9,073
Dayton, Ohio. ....	Public .....	F .....	Gen .....	32,288	58,863
Dedham, Mass. ....	do .....	F .....	Gen .....	11,384	7,116
Denver, Colo. ....	City .....	F .....	Mer .....	23,351	106,670
Do .....	Public .....	F .....	Gen .....	14,000	106,670
Detroit, Mich. ....	do .....	F .....	Gen .....	115,661	205,669
Dover, N. H. ....	do .....	F .....	Gen .....	17,000	12,779
Dubuque, Iowa. ....	Young Men's Library Association .....	S .....	Gen .....	14,618	30,147
Duluth, Minn. ....	Public .....	F .....	Gen .....	10,253	32,725
Easthampton, Mass. ....	Public Library Association .....	F .....	Gen .....	9,305	4,395

<sup>1</sup> Of Buchtel College.<sup>2</sup> No regular time.<sup>3</sup> During efficiency and good behavior.<sup>4</sup> Good behavior.<sup>5</sup> Indefinite.<sup>6</sup> Pleasure of board.<sup>7</sup> Average.<sup>8</sup> No books circulated.<sup>9</sup> No home circulation.<sup>10</sup> High school graduates preferred.<sup>11</sup> All assistants \$9 per week.<sup>12</sup> Salary as instructor.<sup>13</sup> Not fixed; without pay.<sup>14</sup> Not given.<sup>15</sup> From \$600 a year to \$2.50 a week.<sup>16</sup> \$7 to \$15 per week.<sup>17</sup> 18 cents an hour.<sup>18</sup> Pleasure of trustees.<sup>19</sup> Besides salary as professor.



Total income.	Circulation.	Librarian's salary.	Librarian's term.	Hours of daily service.	Vacation.	Number of assistants.	Hours of daily service.	Vacation.	Salary of first assistant.	Salaries of other assistants.	Examination of applicants.
\$10,000	545	\$300	1	( <sup>2</sup> )	Col..	2	6	Col..	\$240	\$120.00	No.
3,300	44,429	720	1	8	1 m..	1	8	1 m..	540		No.
37,900	7,186	5,000	( <sup>3</sup> )	30 d..	27	27	30 d..	30 d..		315.00-2,000.00	Yes.
15,000	108,679	2,500	2	7-5	2 w..	8	8	2 w..	720	480.00	No.
	8,000	2,500	( <sup>4</sup> )	7	1 m..	1	7	1 m..	800		No.
	3,900	1,800	( <sup>5</sup> )		Sem..	3		Sem..	900	Paid by hour.	
	3,100	2,700	( <sup>4</sup> )	7	2 m..	9	7	2 m..	1,203	125.00-900.00	
	3,601		1			1					
4,841	33,893	500	1	7-3 <sup>3</sup>	1 m..	7	3	None	( <sup>26</sup> )	( <sup>20</sup> )	No.
1,800	16,156	800	( <sup>5</sup> )	9	1 m..						No.
	5,000	1,000	3	8		3	8		660	350.00-480.00	No.
	9,516	150	( <sup>6</sup> )	71 <sup>3</sup>	None	1	3 <sup>1</sup>	None	50		No.
7,800		1,500	2	6	2 w..	2	6	2 w..	900	720.00	No.
50,000	452,733	Conf.	( <sup>1</sup> )	8	1 m..	54	8	2 w..	( <sup>21</sup> )	( <sup>21</sup> )	No.
	76,000	720	( <sup>4</sup> )	9	2 w..	1	3	2 m..	180		No.
	( <sup>9</sup> )	3,000	( <sup>4</sup> )	8	1 m..	9	8	2 w..			No.
6,400	41,576	500	1	8 <sup>1</sup>	3 w..	3	8 <sup>1</sup>	3 w..	( <sup>21</sup> )	( <sup>21</sup> )	No. <sup>10</sup>
	27,241	490	( <sup>5</sup> )	6 <sup>2</sup>	None	1	6 <sup>2</sup>	None	400		No.
3,000	59,914	720	( <sup>5</sup> )	5	3 w..	2	5	3 w..	300	96.00	No.
11,369	( <sup>9</sup> )	2,400	( <sup>6</sup> )	8	3 w..	2	8	3 w..	1,200	1,000.00	No.
2,300	28,743	670	1	5	1 m..	3	5	1 m..	150	( <sup>22</sup> )	No.
2,000	7,825	1,000	1	7	Col..	7	7	Col..	650	250.00	No.
32,822	55,000	3,500	1	7-8	1 m..	22	7-8	2 w..	( <sup>23</sup> )	( <sup>13</sup> )	No.
Notified	? 13,000	( <sup>12</sup> )	( <sup>5</sup> )	7	( <sup>13</sup> )		7	( <sup>13</sup> )	( <sup>11</sup> )	( <sup>11</sup> )	No.
170,000	1,715,860		( <sup>5</sup> )								No.
	3,150	900	1	8 <sup>1</sup>		3	8	2 w..	800	600.00-480.00	
	2,500	( <sup>5</sup> )	1	8	2 w..	3	8	2 w..	720	240.00-480.00	No.
12,500	119,329	( <sup>14</sup> )	1	6	2 w..	7	8	2 w..			No.
	19,786		1	5 <sup>3</sup>	None	1	5 <sup>3</sup>				No.
5,800	67,993	750	( <sup>5</sup> )	6	3 w..	3	6	3 w..	456	456.00-360.00	No.
13,000	83,007	1,500	1	9	3 w..	3	7 <sup>1</sup>	3 w..	900	540.00	No.
25,000	93,464	3,000	( <sup>5</sup> )	10	3 w..	14	10	3 w..	1,500	( <sup>15</sup> )	No.
1,902	173,690	1,500	( <sup>5</sup> )	8	2 m..	17	7 <sup>1</sup>	2 w..	1,020	( <sup>16</sup> )	No.
3,000	42,430	1,600	( <sup>4</sup> )	12	4 w..	3	12	2 w..	300	180.00	No.
5,414	8,000	2,000	( <sup>4</sup> )	7	1 m..	5	8	1 m..	600	( <sup>17</sup> )	No.
5,300	1,020	900	1	5	6 w..	1	5	6 w..	900		No.
18,500	114,719	Conf.	( <sup>5</sup> )	Undef.	Undef.	6	9	2 w..	( <sup>21</sup> )	( <sup>21</sup> )	Yes.
						2					
3,100	47,203	800	( <sup>18</sup> )	All day.	1 m..	2	5	1 m..	500	144.00	No.
1,000	4,170	19,500	1	6	Col..	3	6	Col..	600	( <sup>24</sup> )	No.
13,000	25,37,226	2,400	( <sup>26</sup> )	8	None	3	8	None	1,020	1,020.00	Yes.
25,000	Reference.	4,500	( <sup>4</sup> )	( <sup>27</sup> )	( <sup>27</sup> )	32	1 m..	2,500	( <sup>28</sup> )	( <sup>28</sup> )	No.
14,200	122,271	1,200	1	8	3 w..	7	8	2 w..	700	600.00-400.00	No.
4,200	3,761	800	( <sup>4</sup> )	5	Col..						No.
4,500	62,653	700	( <sup>4</sup> )	8	3-4 w	4	7	3 w..	360	240.00-120.00	No.
Varies.	Reference.	( <sup>29</sup> )	( <sup>29</sup> )	( <sup>29</sup> )		50	7	2 w..	( <sup>30</sup> )		No.
130,000	2,094,094	3,600	1	7	2 w..	51	7-7 <sup>3</sup>	2 w..	2,250	( <sup>32</sup> )	No.
	Reference.	( <sup>4</sup> )	8	3 m..			8	3 m..			No.
52,000	240,000		2	7	6 w..	25	8 <sup>3</sup>	3 w..		1,200.00-200.00	No.
9,857	65,577	2,000	1	11	1 m..	2	11	1 m..	1,000	900.00	No.
18,000	50,000	2,000	( <sup>5</sup> )	6	2 w..	4	6	2 w..	700	500.00-450.00	No.
31,000	286,583	2,200	2	( <sup>27</sup> )	2 w..	27	8 <sup>1</sup>	2 w..	( <sup>7</sup> )	742.94	Yes.
	37,387	800	1	2	( <sup>31</sup> )	3	2	None	( <sup>33</sup> )	( <sup>33</sup> )	No.
1,275	1,979	500	1	( <sup>27</sup> )	16 w..	1	6	16 w..	400		No.
6,650	81,230	900	( <sup>6</sup> )	5	2 w..	2	7 <sup>1</sup>	2 w..	1,200	600.00	No.
6,500	83,219	1,000	2	8	2 w..	4	8	2 w..	450	( <sup>34</sup> )	No.
2,500	24,000	720	( <sup>6</sup> )	7	2 w..	1	7	2 w..	240	( <sup>35</sup> )	No.
{ 9,750}	96,200	900	1	8-10	20 d..	5	8	20 d..	900	500.00-180.00	No.
{ 4,560}											
	21,200	500	1	6	2 w..	1	6	2 w..	200		No.
8,760	100,819	2,000	1	10	30 d..	3	9	30 d..	480	360.00	No.
10,000	144,000	1,200	( <sup>5</sup> )	8 <sup>1</sup>	1 m..	6	9	1 m..	( <sup>36</sup> )	( <sup>36</sup> )	No.
45,000	438,851	2,500	( <sup>5</sup> )	8	4 w..	25	8	4 w..	1,166	460.00-140.00	Yes.
3,200	53,000	750	( <sup>18</sup> )	6	2 w..	2	5	2 w..	350	225.00	No.
3,180	25,023	500	1	6 <sup>1</sup>	None						No.
13,900	37,73,634	1,000	( <sup>5</sup> )	8	2 w..	3	8	2 w..	660	660.00-540.00	No.
500	13,050	By day	1	7 <sup>2</sup>		1					No.

<sup>20</sup> Average \$107.10-25 cents and 20 cents an hour.

<sup>21</sup> Confidential.

<sup>22</sup> \$12½ to 20 cents per hour.

<sup>23</sup> Salaries paid by hour; average about \$500.

<sup>24</sup> \$100 each.

<sup>25</sup> Six months.

<sup>26</sup> By contract.

<sup>27</sup> Not fixed.

<sup>28</sup> 20 cents per hour to \$1,500.

<sup>29</sup> Vacant.

<sup>30</sup> No first assistant.

<sup>31</sup> Total number employed.

<sup>32</sup> From \$1,700 down.

<sup>33</sup> 20 cents per hour.

<sup>34</sup> \$450 down to 12½ cents per hour.

<sup>35</sup> Paid by librarian.

<sup>36</sup> \$60 per month.

<sup>37</sup> 1893: 94,041.

Place.	Name of library.	Free or sub- scription.	Class.	Number of volumes.	Population.
Elgin, Ill.	Gail Borden public	F	Gen	13,240	17,429
Elyria, Ohio	Elyria	F. & S.	Gen	10,000	5,611
Falls Village, Conn.				1,500	
Fitchburg, Mass.	Public	F	Gen	24,000	22,007
Florence, Mass.	Lilly	F	Gen	5,500	
Framingham, Mass.	Town	F	Gen	15,263	9,636
Frankfort, Ky.	Kentucky State	F	State	90,000	8,500
Fremont, Ohio	Birchard	F	Gen	12,490	7,140
Gloversville, N. Y.	Free	F	Gen	10,782	13,796
Grand Rapids, Mich.	Public school	F	Gen	29,772	64,147
Green Bay, Wis.	Public	F	Gen	4,310	8,879
Groton, Conn.	Bill Memorial				5,539
Hanover, N. H.	Dartmouth College	F. & S.	Col	75,000	1,817
Harrisburg, Pa.	State	F	State	98,000	40,164
Hartford, Conn.	Case Memorial	F	Gen	55,000	53,182
Do	Public	F	Gen	38,000	53,182
Do	Watkinson library of reference	F	Gen	44,399	53,182
Haverhill, Mass.	Public	F	Gen	52,400	27,322
Helena, Mont.	State	F	State	4,000	13,834
Hoboken, N. J.	Free public	F	Gen	10,483	43,561
Holyoke, Mass.	Public	F	Gen	15,600	35,528
Indianapolis, Ind.	do	F	Gen	51,694	107,445
Do	State	F	State	23,500	107,445
Iowa City, Iowa	Iowa State University	F	Col	27,257	7,016
Ipswich, Mass.	Public	F	Gen	11,500	4,439
Ithaca, N. Y.	Cornell University	F	Col	111,097	11,557
Jackson, Mich.	Public	F	Gen	11,497	20,779
Jamesstown, N. Y.	James Prendergast free	F	Gen	8,756	15,991
Jersey City, N. J.	Free public	F	Gen	30,845	163,987
Kansas City, Mo.	Public	F	Gen	18,000	132,416
Knoxville, Tenn.	Lawson McGhee Memorial	F. & S.	Gen	8,137	22,447
Lacrosse, Wis.	Public	F	Gen	11,560	25,053
Lafayette, Ind.	do	F	Gen	11,220	16,407
Lancaster, Mass.	Town	F	Gen	22,464	2,201
Lawrence, Mass.	Public	F	Gen	33,962	44,559
Leicester, Mass.	do	F	Gen	7,066	3,120
Lincoln, Nebr.	University of Nebraska	F	Col	17,000	55,491
Do	State	F	State	29,000	55,491
Little Rock, Ark.	Arkansas State	F	State	51,000	22,496
Los Angeles, Cal.	Public	F	Gen	29,389	50,394
Lowell, Mass.	City	F	Gen	47,650	77,605
Do	Middlesex Mechanic's	S	Soc	21,260	77,605
Lynn, Mass.	Public	F	Gen	46,294	55,684
Madison, N. J.	Drew Theological Seminary	F	Theol	31,000	
Madison, Wis.	State Historical Society	F	Hist	72,000	13,392
Malden, Mass.	Public	F	Gen	21,340	22,984
Manchester, N. H.	City	F	Gen	36,068	43,983
Medford, Mass.	Public	F	Gen	14,297	11,052
Melrose, Mass.	do	F	Gen	9,729	8,500
Middletown, Conn.	Wesleyan University	F	Col	40,000	9,012
Milwaukee, Wis.	Public	F	Gen	64,217	204,150
Minneapolis, Minn.	do	F	Gen	64,000	164,738
Monmouth, Ill.	Warren County	F. & S.	Gen	14,500	5,936
Muskegon, Mich.	Hackley public	F	Gen	16,194	22,668
Newark, N. J.	Free public	F	Gen	35,937	181,515
New Britain, Conn.	New Britain Institute	S	Sch	8,000	19,010
New Brunswick, N. J.	Free circulating	F	Gen	8,615	18,459
Newburg, N. Y.	Free	F	Gen	18,234	23,263
Newburyport, Mass.	Public	F	Gen	28,720	13,914
New Haven, Conn.	Free public	F	Gen	20,967	85,981
Do	Young Men's Institute	S	Sch	12,000	85,981
New London, Conn.	Public	F	Gen	9,150	13,759
New Orleans, La.	Howard Memorial	F	Gen	13,065	241,995
Newport, R. I.	Redwood Library and Athenæum	F	Gen	37,181	19,449
Newton, Mass.	Free	F	Gen	36,910	24,357
New York, N. Y.	Apprentice's	F	Soc	95,000	1,513,501
Do	Astor	F	Gen	238,946	

<sup>1</sup> Pleasure of board.<sup>2</sup> \$1 a day and increase.<sup>3</sup> No limit.<sup>4</sup> \$500 down to 12½ cents per hour.<sup>5</sup> Indefinite.<sup>6</sup> Not fixed.<sup>7</sup> Interest on \$25,000.<sup>8</sup> Not stated.<sup>9</sup> Average salary \$230.<sup>10</sup> Varies.<sup>11</sup> \$420 each.<sup>12</sup> \$100 per year.<sup>13</sup> And 1 by the hour.<sup>14</sup> Eight months.<sup>15</sup> Confidential.<sup>16</sup> Not given.<sup>17</sup> Good behavior.<sup>18</sup> Average.<sup>19</sup> \$2 a day when employed.



Total income.	Circulation.	Librarian's salary.	Librarian's term.	Hours of daily service.	Vacation.	Number of assistants.	Hours of daily service.	Vacation.	Salary of first assistant.	Salaries of other assistants.	Examination of applicants.
\$6,856	84,522	\$300	Yrs.	10	2 w..	2	10	2 w..		( <sup>2</sup> )	Yes.
1,200	17,000	500	( <sup>1</sup> )	8	2 w..						
100	2,000	150	( <sup>3</sup> )	3	None						No.
4,000	48,918	1,000	1	10	2 w..	5	10	2 w..	\$540	( <sup>4</sup> )	No.
Secans.	11,267	312	( <sup>5</sup> )	7	( <sup>6</sup> )						
3,307	40,143	860	( <sup>5</sup> )	8	2 w..	1	8		200		No.
	Reference.	1,000	2	7	None	1	7	None			No.
( <sup>7</sup> )	15,068	( <sup>8</sup> )	1	7	2 w..						No.
	50,895	1,100	1	( <sup>3</sup> )	4 w..	2	8	2 w..	( <sup>9</sup> )	( <sup>9</sup> )	No.
5,189	147,552	1,200	1	( <sup>10</sup> )	4 w..	7	8	4 w..	( <sup>11</sup> )	( <sup>11</sup> )	No.
900	20,000	360	( <sup>6</sup> )	3-6	2 w..						
		52	1	4	( <sup>5</sup> )	1	2				No.
	Reference.	2,200	5	Col.	Col.	5	2	Col.	( <sup>12</sup> )	( <sup>12</sup> )	No.
	Reference.	2,500	4	10	None	2	8-10	( <sup>9</sup> )			No.
7,600	No record.	2,000		8		3	8	1 m..	480	( <sup>13</sup> ) \$480.00	No.
15,000	<sup>14</sup> 118,184	1,500	( <sup>5</sup> )	8	2 w..	7	8 <sup>1</sup> / <sub>2</sub>	2 w..	( <sup>15</sup> )	( <sup>15</sup> )	No.
	Reference.	( <sup>16</sup> )	1	7	2 w..	1	8	2 w..	( <sup>16</sup> )	( <sup>16</sup> )	No.
5,000	68,416	1,800	( <sup>17</sup> )	9	4 w..	3	9	4 w..	500	<sup>18</sup> 404.00	No.
	Reference.	1,090	2	8	None						No.
7,802	85,480	1,500	( <sup>1</sup> )	10	2 w..	4	7 or 8	2 w..		420.00-520.00	No.
3,000	40,263	650	1	7	2 w..	5	7	2 w..	( <sup>19</sup> )	100.00-250.00	No.
22,000	265,746	1,800	1	8 to 16	1 m..	19	8	2 w..	1,000	400.00-650.00	No.
5,720	Reference.	1,500	2	6	Op.	3	6	Op.	1,100	720.00-900.00	No.
2,600	9,368	1,200	( <sup>1</sup> )	8 <sup>1</sup> / <sub>2</sub>	3 m..	1	8 <sup>1</sup> / <sub>2</sub>	3 m..	500		No.
( <sup>20</sup> )	11,000	( <sup>18</sup> )	( <sup>1</sup> )	7	None	0	8				No.
	Reference.	( <sup>19</sup> )	( <sup>1</sup> )	8	2 m..	13	8	None			No.
2,777	64,210	800	1	7 or 8	None	1	7 or 8	None	400		No.
5,000	45,360	1,500	( <sup>1</sup> )	9	None	4	9	None	420	420.00	No.
28,500	345,096	2,500	( <sup>1</sup> )	7	4 w..	24	8	2 w..	900	180.00-500.00	Yes.
( <sup>21</sup> )	23,263	1,500	( <sup>1</sup> )	9	2 w..	10	9	2 w..	900	225.00-600.00	Yes.
3,216	10,700	900	1	6 <sup>1</sup> / <sub>2</sub>	None	1	6 <sup>1</sup> / <sub>2</sub>	None	360		No.
2,500	39,019	960	1	6	2 w..	2	6	2 w..	( <sup>22</sup> )	( <sup>22</sup> )	No.
3,200	37,939	600	1	11	None	1	11	None	420		No.
1,866	12,336	350	1	<sup>23</sup> 21	None	2	<sup>23</sup> 21	None		25.00	No.
9,500	88,843	1,400	( <sup>5</sup> )	6 or 7	3 w..	7	6 or 7	3 w..	600	( <sup>24</sup> )	No.
	6,127	83	1	<sup>25</sup> 6 <sup>1</sup> / <sub>2</sub>	None	3	<sup>25</sup> 6 <sup>1</sup> / <sub>2</sub>	None		12.00	No.
11,270	Reference.	1,100	( <sup>5</sup> )	9	None	3	9	( <sup>6</sup> )	900	<sup>18</sup> 600.00	No.
5,200	Reference.	( <sup>15</sup> )	4	9	None	3	9	None	1,700	<sup>18</sup> 900.00	No.
	Reference.	( <sup>26</sup> )									
19,000	233,363	1,800	( <sup>1</sup> )	8	3 w..	20	8	2 w..	1,200	180.00-900.00	Yes.
15,000	114,915	1,500	( <sup>17</sup> )	7	2 w..	11	8 <sup>1</sup> / <sub>2</sub>	2 w..	626	187.00-469.00	No.
600	5,944	650	( <sup>17</sup> )	<sup>23</sup> 38	3 w..	0					No.
{ 7,000 }	113,168	1,500	1	7	1 m..	5	7	1 m..	800	200.00-450.00	No.
{ 9,000 }	8,212	( <sup>15</sup> )	( <sup>5</sup> )	8	1 m..	2	8	None	( <sup>16</sup> )	( <sup>16</sup> )	No.
2,000	Reference.	1,600	3	7	25 d.	5	7	25 d.	1,200	<sup>18</sup> 550.00	No.
7,500	72,677	1,600	1	9	2 w..	4	9	2 w..	500	<sup>18</sup> 433.75	No.
1,377	55,874	800	( <sup>5</sup> )	8	( <sup>6</sup> )	2	8	None	275	500.00	No.
4,352	41,670	1,000	( <sup>5</sup> )	6	3 w..	3	6	3 w..	400	240.00	No.
2,000	31,425	475	( <sup>5</sup> )	4 <sup>1</sup> / <sub>2</sub>	2 w..	1	4 <sup>1</sup> / <sub>2</sub>	2 w..	175		No.
	7,500	2,500	( <sup>5</sup> )	7	3 m..	1	7	3 m..	<sup>27</sup> 400		No.
31,000	151,597	2,500	5	8	24 d.	18	8	24 d.	800	240.00-800.00	Yes.
52,346	357,172	3,000	( <sup>5</sup> )	( <sup>6</sup> )		56	8	2 w..	960	( <sup>28</sup> )	No.
	17,000	450	1	10	None	0					
5,500	37,587	( <sup>16</sup> )	1	7 <sup>1</sup> / <sub>2</sub>	1 m..	6	7 <sup>1</sup> / <sub>2</sub>	2 w..			
40,000	274,015	3,000	( <sup>5</sup> )	7	20 d.	25	7	20 d.	900	( <sup>29</sup> )	Yes.
3,800	22,749	750	1	8 <sup>1</sup> / <sub>2</sub>	1 m..	1	8 <sup>1</sup> / <sub>2</sub>	1 m..	216		No.
8,300	8,869	{ 575 } { 900 }	( <sup>17</sup> )	8 <sup>1</sup> / <sub>2</sub>	3 w..	1	8 <sup>1</sup> / <sub>2</sub>	3 w..			
1,600	63,648	1,200	1	10	2 w..	2	10	2 w..		40.00	No.
2,323	33,914	1,000	( <sup>1</sup> )	7	2 w..	3	7	2 w..	300	( <sup>30</sup> )	No.
{ 15,000 }	131,343	1,500	( <sup>5</sup> )	7 <sup>1</sup> / <sub>2</sub>	3 w..	6	8	3 w..	700	( <sup>31</sup> )	Yes.
{ 10,000 }				Vary.	1 m..	1	Vary.	1 m..			
5,000	36,851	900	1	7	1 m..	9	7	1 m..	400	900.00	No.
	Reference.	2,000	( <sup>3</sup> )	8	5 w..	3 <sup>1</sup> / <sub>2</sub>	8	5 w..	( <sup>16</sup> )	( <sup>16</sup> )	No.
15,000	11,282	( <sup>16</sup> )	1	8	2 w..	1	8	2 w..	( <sup>16</sup> )	( <sup>16</sup> )	No.
12,375	127,788	1,200	1	8	3 w..	6	7	3 w..	650	450.00-500.00	No.
<sup>25</sup> 15,000	250,060		( <sup>5</sup> )	11	2 w..	12	11	2 w..	1,300		Yes.
	Reference.	( <sup>32</sup> )	( <sup>5</sup> )	8	1 m..	12	8	1 m..		192.00-900.00	Yes.

<sup>20</sup>Income of \$50,000.<sup>21</sup>Not specified.<sup>22</sup>Paid by librarian.<sup>23</sup>Hours a week.<sup>24</sup>16<sup>2</sup>/<sub>3</sub> cents an hour to \$420 a year.<sup>25</sup>See answer.<sup>26</sup>Secretary of State is librarian.<sup>27</sup>And room rent.<sup>28</sup>\$40 and \$45 a month to begin, with an increase of \$5 each year.<sup>29</sup>From \$900 a year down to 34 cents a day.<sup>30</sup>From \$1 a day to \$375 a year.<sup>31</sup>10 cents an hour to \$480 a year.<sup>32</sup>Superintendent, \$4,000; 4 librarians, \$1,200 to \$1,800 each.



Place.	Name of library.	Free or sub- scription.	Class.	Number of volumes.	Population.
New York, N. Y. ....	Columbia College.....	F....	Col.....	135,000	.....
Do.....	Free circulating.....	F....	Gen.....	58,000	.....
Do.....	Mercantile.....	S....	Gen.....	241,017	.....
Do.....	Union Theological.....	F....	Theol.....	68,633	.....
Do.....	Y. M. C. A.....	F....	Y. M. C. A.....	40,800	.....
Do.....	Y. W. C. A.....	F....	Gen.....	18,005	.....
North Adams, Mass.....	Public.....	F....	Gen.....	12,109	16,067
Northampton, Mass.....	do.....	F....	Gen.....	24,000	14,961
North Easton, Mass.....	Ames free.....	F....	Gen.....	13,466	.....
Norwich, Conn.....	Otis.....	F....	Gen.....	19,000	16,192
Do.....	Reek.....	F....	Sch.....	7,824	16,192
Oakland, Cal.....	Public.....	F....	Gen.....	26,205	.....
Oak Park, Ill.....	Scoville Institute.....	F....	Sch.....	5,750	4,771
Oberlin, Ohio.....	Oberlin College.....	F. & S.	Col.....	26,700	4,376
Olivet, Mich.....	Olivet College.....	F....	Col.....	19,304	.....
Omaha, Nebr.....	Public.....	F....	Gen.....	38,471	139,526
Orono, Me.....	State College.....	F....	Col.....	6,934	2,790
Oxford, Ohio.....	Miami University.....	F....	Col.....	10,800	.....
Passaic, N. J.....	Public.....	F....	Gen.....	3,440	13,027
Paterson, N. J.....	Free public.....	F....	Gen.....	17,932	78,358
Pawtucket, R. I.....	do.....	F....	Gen.....	11,000	27,502
Peekskill, N. Y.....	Public.....	F....	Gen.....	6,011	10,026
Peoria, Ill.....	do.....	F....	Gen.....	40,000	40,758
Philadelphia, Pa.....	Academy of Natural Sciences.....	F....	Gen.....	33,175	1,046,252
Do.....	Apprentice's.....	F....	Soc.....	14,500	.....
Do.....	Athenæum of Philadelphia.....	S....	Soc.....	35,000	.....
Do.....	Drexel Institute.....	F....	Sci.....	37,183	.....
Do.....	Franklin Institute.....	S....	Mer.....	168,700	.....
Do.....	Mercantile.....	F....	Sci.....	7,500	.....
Pittsfield, Mass.....	Wagner Free Institute.....	F....	Gen.....	20,838	17,252
Plainfield, N. J.....	Berkshire Athenæum.....	F....	Gen.....	10,537	11,250
Plymouth, Mass.....	Public.....	F....	Gen.....	10,000	7,292
Poughkeepsie, N. Y.....	do.....	F....	Gen.....	17,355	22,836
Do.....	City.....	F....	Col.....	18,000	22,836
Princeton, N. J.....	Vassar College.....	F....	Col.....	161,000	3,422
Providence, R. I.....	College of New Jersey.....	S....	Col.....	80,000	122,042
Richmond, Ind.....	Brown University.....	F....	Gen.....	17,000	16,845
Riverside, Cal.....	Morrison-Reeves.....	F....	Gen.....	.....	4,683
Rochester, N. Y.....	Public.....	F....	Col.....	26,200	138,327
Do.....	University of Rochester.....	F....	Gen.....	22,744	138,327
Rutland, Vt.....	Reynolds.....	F....	Gen.....	4,000	11,759
Sacramento, Cal.....	Free.....	F....	Gen.....	21,000	26,272
Do.....	Free public.....	F....	State.....	89,000	26,272
St. Johnsbury, Vt.....	Cal'ornia State.....	F....	Gen.....	12,534	6,567
St. Louis, Mo.....	St. Johnsbury Athenæum.....	S....	Mer.....	83,071	460,357
Do.....	Mercantile.....	F. & S.	Gen.....	85,000	460,357
St. Paul, Minn.....	Public.....	F....	Hist.....	20,970	133,156
Do.....	Minnesota Historical Society.....	F....	Gen.....	30,274	133,156
Salem, Mass.....	Public.....	S....	Sci.....	60,000	30,735
Do.....	Essex Institute.....	F....	Gen.....	25,505	30,735
San Diego, Cal.....	Public.....	F....	Gen.....	9,149	16,153
San Francisco, Cal.....	Free public.....	F....	Gen.....	57,934	297,990
Schenectady, N. Y.....	Mechanic's Institute.....	S....	Col.....	37,300	18,392
Scranton, Pa.....	Union College.....	F....	Gen.....	16,000	83,450
Seattle, Wash.....	Public.....	F....	Gen.....	3,000	43,914
Sioux City, Iowa.....	City.....	S....	Gen.....	4,000	37,862
Skaneateles, N. Y.....	do.....	F....	Gen.....	7,491	1,559
Skaneateles Library Association.....	Skaneateles Library Association.....	F....	Gen.....	21,018	40,117
Somerville, Mass.....	Public.....	F....	Gen.....	14,307	7,744
Southbridge, Mass.....	do.....	F....	Gen.....	22,375	24,852
Springfield, Ill.....	do.....	F....	Gen.....	83,049	44,164
Springfield, Mass.....	City Library Association.....	F....	Gen.....	15,598	14,376
Stockton, Cal.....	Free public.....	F....	Col.....	9,924	.....
Swarthmore, Pa.....	Stockton College.....	F....	Gen.....	36,087	25,389
Taunton, Mass.....	Public.....	F....	Gen.....	8,875	30,287
Terre Haute, Ind.....	do.....	F....	Gen.....	.....	.....

<sup>1</sup> See answer.<sup>2</sup> Not given.<sup>3</sup> Indefinite.<sup>4</sup> From 10 cents an hour to \$1,000 a year.<sup>5</sup> Confidential.<sup>6</sup> 20 to 25 cents an hour.<sup>7</sup> 10 cents an hour to \$456 a year.<sup>8</sup> From \$5 to \$6.50 a week.<sup>9</sup> Good behavior.<sup>10</sup> Students.<sup>11</sup> Assistants paid by hour.<sup>12</sup> Pleasure of board.<sup>13</sup> Conference.<sup>14</sup> Not fixed.<sup>15</sup> No salary.<sup>16</sup> \$5 a week to \$50 a month.

Total income.	Circulation.	Librarian's salary.	Librarian's term.	Hours of daily service.	Vacation.	Number of assistants.	Hours of daily service.	Vacation.	Salary of first assistant.	Salaries of other assistants.	Examination of applicants.
<sup>1</sup> Varies.	26,632	( <sup>2</sup> )	<sup>1</sup> rs.	7½	1 m..	30	7½	2 w..			No.
{ \$34,000 }	391,570	\$1,500	( <sup>3</sup> )	8	1 m..	37	8	1 m..	\$800	( <sup>4</sup> )	Yes.
{ 28,000 }	169,627	( <sup>5</sup> )	( <sup>3</sup> )	( <sup>3</sup> )	7 4½ m.	12	9½	2 w..	( <sup>5</sup> )	( <sup>5</sup> )	No.
28,102	No record.	( <sup>2</sup> )	3	9½	1 m..	2	9 to 10	2-3 w	( <sup>5</sup> )	( <sup>5</sup> )	No.
Reference.	44,577	900	( <sup>3</sup> )	7	1 m..	4	7	1 m..	780	( <sup>7</sup> )	No.
4,500	63,756	624	( <sup>3</sup> )	7	2 w..	2	7	2 w..	468	\$312.00	No.
4,600	52,476	442	1	6	None	3	6	None	338	( <sup>8</sup> )	No.
2,400	15,162	700	( <sup>3</sup> )	5	1 m..	0				( <sup>8</sup> )	No.
5,580	75,000	1,500	1	8	2 w..	3	8	2 w..	( <sup>5</sup> )	( <sup>5</sup> )	No.
750	1,506	( <sup>5</sup> )	( <sup>3</sup> )	7½	1 m..	1	1½	2 w..	100		No.
18,127	134,411		1	9	2 w..	2	9	2 w..	65	50.00	No.
2,500	26,031			9	None		9	None	720	300.00	No.
4,600	17,000	1,500	( <sup>2</sup> )	6	2 m..	5	8	6 w..	690	250.00-600.00	No.
1,700	Reference.	( <sup>2</sup> )		5	12 w..	( <sup>10</sup> )	2	12 w..	( <sup>11</sup> )	( <sup>11</sup> )	No.
24,000	189,007	1,800	( <sup>12</sup> )	8	( <sup>13</sup> )	7	8	2 w..	900	300.00-600.00	No.
( <sup>14</sup> )	1,307	800	( <sup>3</sup> )	8	16 w..	0					No.
1,000	1,143	( <sup>13</sup> )	( <sup>3</sup> )	3	Coll.	0					No.
1,300	3,400	550	( <sup>3</sup> )	( <sup>3</sup> )	4 w..	1	( <sup>3</sup> )	2 w..	208		No.
10,235	85,860	1,800	( <sup>12</sup> )	8	4 w..	8	8	3 w..	690	60.00-500.00	Yes.
6,700	46,673	800	( <sup>9</sup> )	7	2 w..	4	7	2 w..	520	104.00-400.00	No.
691	22,200	260	( <sup>12</sup> )	6	2 w..	0					No.
{ 15,000 }	80,294	2,000	( <sup>9</sup> )	9	*2-4 w	7	9½	2 w..	( <sup>16</sup> )	( <sup>16</sup> )	Yes.
{ 12,200 }	Reference.	1,500	1	5	( <sup>3</sup> )	2	8	( <sup>4</sup> )		17 540.00	Yes.
	62,699	900	1	9	1 m..	5	6	14 d.		250.00	No.
	2,500	1,000	( <sup>3</sup> )	7½	2 m..	0					No.
( <sup>1</sup> )	2,127	1,000	( <sup>9</sup> )	11½	( <sup>15</sup> )	1	9	( <sup>15</sup> )	130		No.
17,350	87,000	1,600	( <sup>3</sup> )	8½	2 w..	10	8½	2 w..	729	180.00-450.00	No.
( <sup>1</sup> )	Reference.	600	1	7	2 w..	2	7	2 w..	480	240.00	No.
4,000	Reference.	( <sup>5</sup> )	( <sup>9</sup> )	8	None	1	8	None	( <sup>5</sup> )	( <sup>5</sup> )	Yes.
3,200	19,544	600	( <sup>9</sup> )	7	3 w..	1	4	None	( <sup>19</sup> )	( <sup>19</sup> )	No.
	24,000	( <sup>2</sup> )	( <sup>9</sup> )	8	2 w..	1	8	2 w..			No.
3,500	35,428	1,650	1	8	3 w..	2	8	3 w..	403	360.00	No.
Reference.	30,000	( <sup>5</sup> )	( <sup>9</sup> )	6	Coll.	8	8	Coll.	( <sup>4</sup> )	( <sup>5</sup> )	No.
2,774	10,437	2,800	( <sup>3</sup> )	7	1 m..	1	7	1 m..	900		No.
	54,500	( <sup>20</sup> )	( <sup>3</sup> )	8	( <sup>14</sup> )	5	8	2 w..	( <sup>3</sup> )	( <sup>7</sup> )	No.
	32,224	600	( <sup>3</sup> )	7½	None	1	7 to 8	None	264		No.
Reference.	( <sup>21</sup> )	( <sup>12</sup> )	9½	2 w..	1	6½	2 w..	800			No.
20,925	10,821	1,200	1	9	None	0					No.
2,550	46,265	800	( <sup>9</sup> )	8	1 m..	2	8	1 m..	400	22 150.00	No.
	41,402	1,080	1	8	1 m..	2	8	1 m..	840	420.00	No.
26,255	Reference.	3,000	4	6	( <sup>14</sup> )	6	6	2 w..	( <sup>3</sup> )	( <sup>5</sup> )	No.
3,000	17,068	750	( <sup>3</sup> )	7	1 m..	2	4	None	( <sup>23</sup> )	( <sup>23</sup> )	No.
20,000	219,346	3,000	( <sup>12</sup> )	( <sup>14</sup> )	( <sup>14</sup> )	13	8	2-4 w	900	240.00-1,500.00	No.
54,000	121,000	3,600	3	( <sup>14</sup> )	2 m..	12	8½	1-5 w	( <sup>5</sup> )	( <sup>5</sup> )	Yes.
6,000	Reference.	800	3	9½	2 w..	1	9½	2 w..	900		No.
13,000	116,618	( <sup>2</sup> )	( <sup>9</sup> )		2 w..	9	9	2 w..	( <sup>7</sup> )	( <sup>7</sup> )	No.
6,400	Reference.		1	7	2 w..	3	8	2-3 w		17 300	No.
12,900	106,142	1,500	( <sup>9</sup> )	7½	2 w..	4	8	2 w..		( <sup>24</sup> )	No.
40,000	56,137	960	2	7	2 w..	3	7	2 w..	600	300.00-480.00	No.
	139,099	3,000	( <sup>9</sup> )	9	2 w..	8	9	2 w..	1,800	300.00-1,080.00	No.
( <sup>1</sup> )	Reference.	750	( <sup>9</sup> )	4	Coll.	1	1	Coll.	50		No.
10,200	( <sup>25</sup> )	1,800	1	( <sup>14</sup> )	2-4 w	6	8	2-3 w		180.00-600.00	No.
12,000	100,000	1,200	( <sup>3</sup> )	8	20 d.	5	8	20 d.	840	600.00-660.00	No.
10,250	12,775	720	1	8	None	2	7½	None	900	420.00	No.
	7,103	500	1	11½	2 w..	1	11½	2 w..	84		No.
( <sup>1</sup> )	96,311	800	1	10	3 w..	8	10	3 w..	( <sup>26</sup> )	( <sup>26</sup> )	No.
	16,760	900	1	8	None	4		None	( <sup>27</sup> )	( <sup>27</sup> )	No.
3,500	71,210	903	( <sup>9</sup> )	8	None	1	8	1 m..	480		No.
25,000	133,301	1,600	( <sup>9</sup> )	( <sup>14</sup> )	( <sup>14</sup> )	9	7	3 w..		17 600.00	No.
6,000	82,636	1,200	( <sup>9</sup> )	10	2 w..	4	10	2 w..	720	420.00-480.00	No.
	800	( <sup>2</sup> )	( <sup>9</sup> )	8	Coll.						No.
6,745	55,103	1,300	1	10	3 w..	2	9	3 w..		17 450.00	No.
3,900	25,740	550	1	10	None	1	10	None	525		No.

<sup>17</sup> Average.

<sup>18</sup> 1 day a week in summer.

<sup>19</sup> \$1 a day.

20 Small.

<sup>21</sup> Professor.

22 Sundays.

<sup>23</sup> 12½ cents an hour, others 10 to 15 cents an hour.

<sup>24</sup> Regulars, \$420 a year; others 12 cents an hour.

<sup>25</sup> Began June 1, 1893.

<sup>26</sup> 10 cents an hour to \$100 a year.

<sup>27</sup> Paid by librarian.

<sup>2</sup> Taken by Potapkin.

Place.	Name of library.	Free or sub- scription.	Class.	Number of volumes.	Population.
Toledo, Ohio.....	Public.....	F.....	Gen.....	33,469	82,652
Topeka, Kans.....	Free public.....	F.....	Gen.....	12,000	31,809
Trenton, N. J.....	New Jersey State.....	F.....	State.....	40,141	58,488
Do.....	Union (W. C. T. U.).....	S.....	Gen.....	6,000	58,488
Troy, N. Y.....	Troy Young Men's Association.....	F.....	Gen.....	30,201	60,699
Vergennes, Vt.....	Vergennes.....	F.....	Gen.....	2,800	.....
Waltham, Mass.....	Public.....	F.....	Gen.....	20,386	18,522
Warwick, Mass.....	do.....	F.....	Gen.....	2,712	565
Washington, D. C.....	U. S. Bureau of Education.....	F.....	Gov.....	45,000	229,296
Do.....	U. S. Coast and Geodetic Survey.....	F.....	Gov.....	12,000	.....
Do.....	Library of Congress.....	F.....	Gov.....	660,000	.....
Do.....	U. S. Naval Academy.....	F.....	Gov.....	.....	.....
Do.....	U. S. Patent Office.....	F.....	Gov.....	63,082	.....
Do.....	U. S. Weather Bureau.....	F.....	Gov.....	.....	.....
Waterbury, Conn.....	Silas Bronson.....	F.....	Gen.....	48,218	28,591
Watertown, Mass.....	Free public.....	F.....	Gen.....	21,600	7,058
Waterville, Me.....	Colby University.....	S.....	Col.....	27,735	7,691
Wellesley, Mass.....	Wellesley College.....	F.....	Col.....	43,000	3,600
West Winsted, Conn.....	Beardsley.....	S.....	Gen.....	6,468	4,846
Weymouth, Mass.....	Tufts College.....	F.....	Gen.....	13,895	10,843
Wilkesbarre, Pa.....	Osterhout free.....	F.....	Gen.....	17,073	37,651
Windsor, Vt.....	Library Association.....	F.....	Gen.....	6,435	1,846
Woburn, Mass.....	Public.....	F.....	Gen.....	31,036	13,491
Woodstock, Vt.....	Norman Williams public.....	F.....	Gen.....	7,389	2,545
Woonsocket, R. I.....	Harris Institute.....	F.....	Sch.....	12,341	20,759
Worcester, Mass.....	American Antiquarian Society.....	F.....	Hist.....	93,000	84,536
Do.....	Free public.....	F.....	Gen.....	89,268	84,536

<sup>1</sup> Pleasure of board.<sup>2</sup> For all.<sup>3</sup> Good behavior.<sup>4</sup> Not given.<sup>5</sup> Total cost, \$7,300.<sup>6</sup> Confidential.<sup>7</sup> Indefinite.<sup>8</sup> 2 days a week.



Total income.	Circulation.	Librarian's salary.	Librarian's term.	Hours of daily service.	Vacation.	Number of assistants.	Hours of daily service.	Vacation.	Salary of first assistant.	Salaries of other assistants.	Examination of applicants.
\$15,000	101,723	.....	Yrs.	6	3 w..	6	6	3 w..	\$600	2 \$3,388.00	No.
5,000	45,760	\$720	(1)	7	2 w..	3	7	2 w..	.....	340.00	No.
.....	Reference	(4)	(3)	.....	.....	2	.....	None	(5)	(5)	No.
.....	15,148	600	1	11	2 w..	.....	11	2 w..	(4)	(4)	No.
4,700	47,012	1,020	(1)	8	16 d.	2	8	2½ w.	(6)	(6)	No.
.....	.....	200	(7)	(8)	None	0	.....	.....	.....	.....	.....
.....	43,451	650	1	8	4 w..	2	8	4 w..	500	120.00	No.
.....	2,553	30	1	(9)	None	0	.....	.....	.....	.....	.....
2,000	Reference.	.....	.....	7	1 m..	6	.....	None	.....	.....	Yes.
(10)	Reference.	1,800	(7)	6½	30 d.	2	6½	None	1,400	720.00	Yes.
(10)	Limited.	4,000	(11)	8	30 d.	27	8	None	2,500	600.00-1,800.00	No.
.....	.....	1,800	(3)	7	None	2	7	None	1,400	700.00	No.
.....	Reference.	2,000	(12)	6	(4)	18	6	None	(4)	(4)	No.
.....	.....	1,600	(3)	6½	30 d.	3	6½	30 d.	1,000	450.00-100.00	Yes.
12,500	65,350	1,800	(7)	8½	4 w..	4	7 to 8½	4 w..	700	250.00-500.00	No.
4,000	36,000	(4)	(7)	6	2 w..	4	6	2 w..	.....	250.00-500.00	Yes.
(10)	7,500	1,800	(7)	7	Coll.	1	7	Coll.	200	.....	No.
.....	Reference.	(13)	1	6	3 m..	2	6	2 m..	.....	14800.00	No.
.....	8,347	(4)	(7)	7	2 w..	0	7	2 w..	.....	.....	No.
.....	58,246	500	1	7	3 w..	2	7	3 w..	(15)	(15)	No.
16,000	54,885	2,000	(3)	8½	4 w..	6	7 to 8	4 w..	800	480.00-690.00	No.
600	8,114	(4)	(3)	1½	None	1	1½	None	75	.....	No.
6,000	62,926	1,200	1	9½	2 w..	2	8	2 w..	600	300.00	No.
2,580	12,762	360	1	7	None	0	.....	.....	.....	.....	.....
8,600	21,297	600	.....	7	1 m..	1	7	1 m..	250	.....	No.
7,500	Reference.	1,800	(1)	7	3 w..	2	7	3 w..	(6)	(6)	No.
28,360	199,108	3,500	1	6	30 d.	20	7½	30 d.	1,000	(16)	No.

<sup>9</sup> 10 hours a week.<sup>10</sup> See answer.<sup>11</sup> Pleasure of President.<sup>12</sup> Not fixed.<sup>13</sup> \$900 and house.<sup>14</sup> Average.<sup>15</sup> 15 cents an hour.<sup>16</sup> 12½ cents an hour to \$750 a year.

## THE LOS ANGELES PUBLIC LIBRARY TRAINING CLASS.

By TESSA L. KELSO, Public Librarian, Los Angeles, Cal.

In October, 1891, the following rules were adopted by the board:

That previous to being given paid employment all applicants be required to take a course of training in the library, not to exceed six months.

That once every three months an examination shall be held of such candidates as may have presented themselves for admission to the classes.

That these examinations be general in character, aiming only to determine whether by previous education and natural adaptability the qualifications of the applicant are sufficient to warrant the undertaking of library work.

That, having given satisfactory evidence of such qualification, the candidate be accepted as a pupil in the training class, subject to the following conditions:

*Entrance examination.*—Open to young women of not less than 17 years of age. Candidates to file written applications on following blank provided for this purpose, agreeing to give three hours' daily service for a period of six months.

## APPLICATION FOR POSITION AS LIBRARY PUPIL.

*To the Board of Directors of the Los Angeles Public Library:*

I hereby make application to be placed on the list for appointment as a pupil in the public library, subject to existing rules and any rules to be hereafter made by the board of directors, and I herewith furnish answers to the questions below in my own handwriting.

Questions.	Answers.
1. Give full name.....	
2. Residence (street and number).....	
3. How long have you resided in Los Angeles? .....	
4. Place of birth.....	
5. Age .....	
6. Are you engaged in any occupation? Give particulars .....	
7. What school training and business experience, if any, have you had?....	
8. Have you a father living? If so, state where and in what business.....	
9. Have you a mother living?.....	
10. Do you reside with your parents?.....	
11. What is the condition of your general health?.....	
12. Have you read the printed rules and regulations of the library?.....	
13. Have you any knowledge of languages? Give particulars.....	
14. Give names and address of at least two persons to whom you refer.....	

[Signature of applicant.]

Name ————,

Address ————.

Dated ——— —, 189—.

*Los Angeles Public Library Training Class.*

## REQUIREMENTS.

The library, in its training class, does not profess to give general information, or to make up deficiencies in early education, and therefore requires of all candidates for admission to the class attainments equivalent at least to those of a completed high school course.

Before submitting themselves for examination, candidates must have informed themselves of the contents both of the preface and appendix to the finding list, and of the rules and regulations of the library.

Candidates will be examined in literature, history, current topics, and business forms. No promise of permanent employment in this library is held out to any candidate; but all regular appointments to the library staff are made from the ranks of the library training class graduates.

Applicants must be young women not under 17 years of age, and they must agree to give three hours' daily service for a period of not less than six months, at the end of which time, upon passing an examination in a manner satisfactory to the board, they will be placed on the substitute list for paid employment as opportunity offers.

## SUGGESTED PREPARATION FOR ENTRANCE EXAMINATION.

Make a copy of the 900 (history) classification adopted by this library.

Fill in with the names of the most important authors and titles of books on the different periods and countries.

See Dewey—Decimal Classification.

See Adams's Historical Literature.

See Freeman's Outlines.

See Allen's History Topics.

Make a copy of the 800 (literature) classification adopted by this library.

Fill in with the titles of the most important books of the authors there represented.

See Stedman—Encyclopedia of American Literature.

See Underwood—Handbook of English Literature.

See Allibone—Dictionary of Authors.

See Scherer—History of German Literature.

See Van Laun—History of French Literature.

See Ticknor—History of Spanish Literature.

See Quackenbos—Ancient and Classical Literature.

See Dewey—Decimal Classification.

Group the 800 (literature) classification into centuries, thereby making a contemporaneous classification of the literature of all countries.

See Dewey—Decimal Classification.

Make a copy of the 320 and 330 (political economy and social science) classification. Fill in with authors and titles of books best representing subheads of these classes.

See Dewey—Decimal Classification.

Be able to name at least one authority on each one of the subclasses of 500 (natural science).

See Dewey—Decimal Classification.

Be familiar with the names and dates given in the 180-190 (history of philosophy) classification.

See Dewey—Decimal Classification.



The examination is largely oral, and is conducted by a committee of three of the directors. The following specimen questions from the last examination show its nature:

1. Do you take books from the library?
2. Have you read the preface and appendix to the finding list?
3. What is Poole's Index?
4. What system of classification is used in this library?
5. Have you read the rules and regulations of this library, and questions bearing thereon?
6. What periodicals do you read?
7. Name the three largest towns in Los Angeles County in order.
8. What are the population, area, and manufactures of Los Angeles?
9. Write the names of five leading American novelists.
10. Write the titles of five leading American periodicals. Five leading British periodicals.
11. When was the first Atlantic cable laid?
12. What is the oldest record of a public library?
13. Who invented printing and when was it introduced?
14. Write the names of five leading American daily newspapers.
15. Mention one writer and one book on each of the following subjects: Philosophy, religion, education, astronomy, geology, fine arts, travels.
16. Write the title of one work of the following authors, giving author's nationality: Ruskin, Prescott, Darwin, Schiller, Hugh Miller.
17. Write the names of authors of the following works: Sartor Resartus, Don Quixote, Jerusalem Delivered, Robinson Crusoe, Gates Ajar, Pentateuch, Mother Goose, Locksley Hall, Eve of St. Agnes, Wealth of Nations, Water Babies.
18. Who made the first English dictionary, and when?
19. Name the standard English dictionaries of to-day, and describe their respective merits.
20. Who was the founder of the school of American fiction?
21. Write the names of five leading American poets. Five leading English poets.
22. Locate by century and briefly characterize: Bacon, Molière, Garrick, Michael Angelo, Newton, Copernicus, Tasso, Pope, Milton, Spanish Armada, Nelson, Cervantes, Shakespeare, etc.

Enough candidates, i. e., not less than six, having satisfactorily passed the entrance examination they immediately report for duty, and from this time are governed by the rules and regulations of the regular staff. Hours of arrival are assigned to each pupil, and their names are entered on the time register for regular employees. All absence and tardiness from whatever cause is noted and reported to the examining committee on the day of the final examination. Very little theoretic instruction is given, the work of the pupil being absolutely practical; not part of, but all the actual daily routine of the library is supplemented by lectures on library economy and comparative literature. Pupils are encouraged to attend the meetings of the Southern California Library Club, where topics of a technical and general nature are discussed by teachers and librarians of Los Angeles and surrounding towns. Pupils are not only shown how a thing is done; they are required to do it themselves. Under direction of the assistant librarian, each pupil in turn serves as an understudy to the heads of the various departments. The library has a collection of

blanks from 40 or 50 American and English libraries which are used for comparative study in the different departments. No fees for either the first or second course are exacted, and no conditions requiring educational diplomas are made. Apprenticeship is divided into two courses of six months of three hours' daily service each, and the work of each student is apportioned as follows:

FIRST COURSE, THREE TERMS, TWO MONTHS EACH.

*First term, eight weeks, three hours daily.*

*Accession, first to sixth week.*—First week: Theory of selecting and buying books, prices, editions, duty, transportation. Second week: Examination of trade catalogs, publishers' lists, and second-hand catalogs. Third and fourth weeks: Correspondence, including library handwriting, care of letter, order, and gift books, letter files, presses, etc. Fifth and sixth weeks: Reception of books, checking bills, preparation of books for the shelves.

*Binding and mailing, seventh and eighth weeks.*—Student prepares books for bindery, keeps bindery book, inspects bindery, receives, checks, records and files the periodicals and newspapers, care of periodical subscription lists, use of postal notes and money orders, local and foreign rates for first, second, third, and fourth class matter explained.

*Second term, eight weeks, three hours daily.*

*Classification, first to fourth week.*—Dewey and Cutter systems taught, others explained. Last week in this work given to study of typographic form of catalogs. Three hours each month given to reading proof of library bulletin and special lists. A rotatory schedule is arranged to cover three months, assigning to each pupil the weekly care of one of the 10 classes in the circulating department. During this time pupils have the entire care of the different classes, keeping the shelves in order, the books neatly labeled, the shelf sheets up to date, reporting missing volumes, etc.

*Reference, fourth to eighth week.*—First week: Study of catalogs and bibliographies. Second week: Examination of reference books, compilation of five lists of reference books, viz, one of \$500, one of \$1,000, one of \$2,000, one of \$2,500, and one of \$5,000, respectively. Third week: Study of authorities on history, political economy, religion, and art. Fourth week: Compilation of a special list. Subjects of lists prepared by previous classes are as follows: Arthurian legends, American history by periods, American history by geographical divisions, a study of California State documents with reports made to the governor, a study of works on ancient art, a study of the St. Amand series, United States publications. \* \* \* These studies embrace the mechanical form of the volumes, the standing and personality of the author, and the source and comparative merit of the text.

*Third term, eight weeks, three hours daily.*

*Loan and shelf.*—First week: Library use. Pupil makes a collection of all blanks used in this library, and examines the collections of blanks of other libraries, which are mounted and indexed for this use. Second week: Home use. Pupil completes her collection and examination of blanks, and studies various methods of charging, recording, lost and overdue books, school loans, branch libraries, etc. Third week: Registration. Pupil is stationed at registry desk to do actual service under direction of the clerk in charge. Fourth week: Pupil studies arrangement of shelves, nota-

tion, value of fixed and relative locations, care of documents, pamphlets, maps, music, periodicals, shelf sheets, etc. Fifth to eighth week, inclusive: Pupils are assigned to practical work at the receiving, delivery, and registry desks.

*Examination.*—Having completed the six-months course, a written examination, covering the work done, is required. Time, 10 hours; total number of credits, 500, divided as follows:

Accession (12 questions) .....	120
Classification and reference (16 questions).....	160
Loan and shelf (12 questions).....	120
Thesis .....	100

Thesis to be on some subject of library economy selected by the pupil and approved by the committee, and submitted on the day of examination.

Pupils passing with an average of 70 per cent receive certificates, an average of 85 per cent entitling them to employment in the library for six months, four hours a day, at \$10 per month, provided the pupil takes the second course.

#### LOS ANGELES PUBLIC LIBRARY.

##### PUPIL'S CERTIFICATE.

LOS ANGELES, CAL., ——— —, 189 —.

This is to certify that ——— ——— has completed the first course of six months' study in this library for the purpose of qualifying in the duties of an attendant, and has passed the prescribed examination with credit.

Maximum credits, ———.

Percentage obtained, ———.

—————, *President.*

Attest:

—————,

*Clerk and Librarian.*

Following is the final first course examination, given to the last class, with subjects of theses. Ten credits are assigned to each question.

1. What is the main financial support of this library; how is it derived, and under what conditions?
2. Describe concisely everything that is done with a book, or in relation to it, from the time it is ordered to the time it gets on the library shelves.
3. Name at least five great book markets of the world.
4. What is the average discount to a public library on American books bought in New York?
5. Name at least six authentic sources, not necessarily American, of value to the librarian in the selection of books.
6. Name at least five large American publishing houses, giving their location.
7. What American publishing firm makes a specialty of maps, atlases, guides, etc., and where is it located?
8. How would you trace the price and publisher of an American book published within the last six months?
9. What determines the value of an edition for public library use?
10. Describe concisely the purpose and form of the accession book.
11. Note briefly the records necessary in the accession department.



## 12. Abbreviate—

- |                   |                   |                       |
|-------------------|-------------------|-----------------------|
| 1. Biography.     | 15. Including.    | 29. Series.           |
| 2. Illustrated.   | 16. American.     | 30. Supplement.       |
| 3. Society.       | 17. Large octavo. | 31. Introduction.     |
| 4. Translated-or. | 18. Compiled-er.  | 32. Copy-copyrighted. |
| 5. Chronologic.   | 19. Born.         | 33. Fiction.          |
| 6. Died.          | 20. French.       | 34. German.           |
| 7. From.          | 21. Greek.        | 35. Italian.          |
| 8. Christian.     | 22. Roman.        | 36. Russian.          |
| 9. Latin.         | 23. Danish.       | 37. English.          |
| 10. Swedish.      | 24. Number-s.     | 38. Part.             |
| 11. Manuscript.   | 25. Engraver-ed.  | 39. Pseudonym.        |
| 12. Published-or. | 26. Edition-or.   | 40. Volumes.          |
| 13. Anonymous.    | 27. Catalogue.    |                       |
| 14. Report.       | 28. Journal.      |                       |

13. What are the principal systems of classification adopted by American libraries, and what are their chief points of variance?

14. What are some of the characteristic features of the Dewey system?

15. Define the classification or arrangement adopted in a classed catalog, an author catalog, a dictionary catalog, and cite an instance of each.

16. What are the chief enemies of a library book and the causes of its injury and destruction?

17. Explain notation, classification, and cataloging, and define their relative connection.

18. Name the principal dictionaries of the English language in use to-day, and give your estimate of their comparative merits and advantages.

19. Name five important books issued during the last six months, with description and critical note.

20. Give a list of 5 daily, 10 weekly, and 20 monthly periodicals you would suggest for a public library newsroom.

21. Describe briefly the bibliographic periodicals of this country.

22. Describe Poole's Index.

23. In looking up the subject of the Reformation, of what assistance would the D. C. be to you?

24. Define 923, 143, 68, b<sup>3</sup>.

25. What catalogs of United States public documents have been and are being issued?

26. What connection have the following-named persons with American literature? Justin Winsor, R. R. Bowker, F. Leypoldt, Paul Leicester Ford, Wm. I. Fletcher, Wm. Dwight Whitney.

27. Make as complete a list as you can of the magazines and reviews on file in the reference room of this library.

28. Of what special fiction lists have you knowledge?

29. Who is eligible to membership in this library, and under what conditions?

30. What is the responsibility of the guarantor?

31. Describe the school-delivery system of this library.

32. Outline briefly the delivery-station system and the branch-library system.

33. Specify briefly the rules of this library for the time limitations of book loans; for fines imposed for delinquencies; for the security to be given in case of loss of book or card.

34. What is the function of the shelf sheet?

35. Give a form of monthly report on the work of a public library.

36. Give the points to be covered by the index to the membership of a public library.

37. State, as nearly as you can, the relative circulation of the different classes of this library.

38. Describe the "slip case" and its uses.

39. Make an imaginary receipted invoice for any twelve books, showing various discounts of 25, 33 $\frac{1}{3}$ , and 40 per cent.

40. Describe the qualifications necessary for success in an attendant who waits on the public at the counter.

Subjects of theses: "Library benefactions," 1,293 words; "Two aspects of the library question, education—recreation," 1,328 words; "Importance of proper reading for the young," 1,160 words; "American bibliographies," 1,390 words; "Charging systems," 1,650 words; "Service at the desk in a public library," 1,008 words.

#### SECOND COURSE, SIX MONTHS.

*Two terms, three months each, three hours daily.*

First term. Practical cataloging, Cutter system taught; others explained.

Second term. Theoretic work based on deductions made by careful study of American and foreign library reports and statistics and professional periodicals. Thorough study of California State law governing libraries, and of its application in municipal administration.

*Examination.*—Technical, written; ten hours; percentages same as for first course; no thesis. Pupils receive the following certificate:

#### LOS ANGELES PUBLIC LIBRARY.

##### \* PUPIL'S CERTIFICATE.

LOS ANGELES, CAL., ———, 189—.

This is to certify that ——— has completed the second course of six months' study in this library for the purpose of qualifying in the duties of a cataloger, and has passed the prescribed examination with credit.

Maximum credits, ———.

Percentage obtained, ———.

————, *President.*

Attest:

————,

*Clerk and Librarian.*

Pupils after the first month's service become eligible to Sunday and holiday duty at 20 cents an hour, and to employment by the clipping bureau of this library at the regular rates. No pupil may be employed as substitute till she has at least passed the first-course examination with an average of 70 per cent.

No promise of permanent employment in this library is held out to any applicant; neither are regular appointments to the library staff made except from the ranks of training-class graduates. The library staff is divided into nine classes, with salaries ranging from \$10 to \$50 per month, and hours of service from four to eight hours per day. The number of attendants in the higher classes is limited, and to these no promotions are possible, except in case of vacancies. The regular staff is divided into three groups, the salaries of \$10 to \$25, first class; \$25 to \$35, second class; and \$35 to \$50, third class. The certificated pupils are divided into corresponding groups, the percentages of each being graded as follows: 70 to 80 in the first class, 80 to 90 in the second class, and 90 to 100 in the third class, and from these the substitutes are employed.

This plan has been in successful operation in the Los Angeles Public Library for three years, 60 applications for admission to the classes having been received, meantime, from this and Eastern cities. Of 37 applicants who have served as apprentices, 19 have passed the examinations and 15 have been absorbed by the library in which they have received their training. Our library has found that its liberal conditions enable young women to take the training course who otherwise would have been debarred from the apprenticeship, yet who at the end of the six months' service will develop unexpected and desirable library qualities. These persons the library encourages to continue their studies by offering them the slight remuneration of \$10 per month, provided the second course is taken, at the conclusion of which it is estimated that the student will have acquired such executive or cataloging ability as will make her a valuable assistant in either capacity. In several cases young women who appeared specially bright and capable, apparently possessing that quick perception and tact so desirable in public library service, proved on trial utterly incapable of performing that most trying of all the library duties, namely, desk service. To be able to cope successfully with a restless throng at the delivery desk, or to make courteous and appropriate suggestions or directions to readers is a faculty not learned in any school but that of experience. Such cases as above cited drop from the ranks of the apprentices in a perfectly natural manner. That sifting process is constantly going on, so that those who remain have won confidence by proved efficiency.

For small libraries specially hampered by a chronic necessity for retrenchment, the plan of a training class or apprentice system is recommended as a direct saving of money. There is always enough local material within reach which, though undesirable in its inexperienced state, will nevertheless, trained and fitted for service, be a considerable factor in securing for the library the general esteem. As this is the library's source of support, it is a double-edged stroke of policy to train local employees, thereby not only fastening its hold on its constituents but at the same time receiving an amount of service which, if paid for in coin, would add considerably to the annual salary account.

#### SUNDAY OPENING OF LIBRARIES.

By MARY SALOME CUTLER,

Vice-Director New York State Library School.

This theme has the advantage of being unhackneyed, at least in the ordinary channels of library discussion. Except for a single casual mention at the Thousand Islands, it first came before the American Library Association in St. Louis, 1889. This report is simply a revision of that paper, bringing it up to date. The Government report, our text-book of library science, makes only incidental mention of it. The index to the Library Journal gives us 63 references to the subject, but



only 3 to an article covering more than a single page. It has but one mention in the 12 numbers of Library Notes. In 1877, while entertaining their American cousins, the British librarians had a little informal talk on this subject. In 1879 a Sunday opening motion was withdrawn by Mr. Axon in deference to the feelings of the opposition, and in the three following years similar motions were tabled without discussion. (See *L. j.* 2: 274-5; 4: 420; 5: 265-66; 6: 258; 7: 231.) However this may be accounted for, we would claim for it an important place among the practical problems that must be solved by the modern librarian in raising his library to the highest usefulness.

The present discussion is limited to public libraries, though the statistics gathered include other classes. Much that will be said applies to libraries in general; moreover, the various kinds shade into each other, e. g., the proprietary often does the same work as the free public. The strongest advocates of the plan will try to convince us, with at least some show of reason, that even libraries for scholars should be run on the "town-pump" principle, and will point us to the fact that the Boston Athenæum has been open on Sunday since 1807, and that Harvard College library, an acknowledged leader, has opened its doors from 1 to 5 on Sunday since October 3, 1880, with a growing use from that day to this. They will also remind us that this action was approved by Phillips Brooks as chairman of the board of overseers. At the same time there is a clear distinction between libraries for scholars and libraries for the people; between working libraries (mental laboratories) and those designed for recreation and general culture. Arguments which obtain for opening the one do not hold good for the other. We therefore choose not to complicate the matter by a minor issue, but to ask ourselves in all seriousness the practical question, Should free libraries be open on Sunday?

We are met at the outset by the statement that the plan proposed is a dangerous step because of its inevitable tendency to secularize the Sabbath. It is looked on as the opening wedge which would lead gradually to breaking down the day of rest. From libraries and art galleries to museums is a single step, and by and by the lowering of public conscience will call for Sunday concerts, and a little later Sunday theater-going will be looked on with complacency. Meanwhile, if men must work that others may be amused, the passion for gain will soon demand increase of labor in other directions. They picture to us the French Sunday, a Sabbath only in name and in reality a seventh day of labor, and with this in mind we feel that those who have these matters in hand should think twice before running any risk of such a consummation.

In Cardiff, Wales, where there is a free library and museum, an offer was made of a valuable gift of pictures, on condition that the picture gallery be kept open on Sunday. The reply of the committee (after refusing to call for the opinion of the taxpayers) expresses the senti-

ment of that large class of earnest and conscientious citizens who oppose such movements:

*Resolved*, That in the opinion of this committee, seeing the logical issue of opening museums on Sunday must involve an enormous increase in Sunday labor, and so lead to the virtual enslavement of workingmen and to the prejudice of national interests, it is undesirable to accept the offer of Colonel Hill on the condition named.

This is the position taken by Bishop Potter in an admirable article (see *New Princeton Review* for 1886, 2: 37-47), one of the best presentations of this side of the Sunday question.<sup>1</sup> It shows an entire absence of the Pharisaic spirit and a thoughtful consideration of the best interests of the laboring class. He makes a strong point of the claim that the workingmen themselves do not desire Sunday opening. This feeling is expressed by a vote taken in England in 1882, where, he says, 62 trades unions, representing 45,482 members, voted in favor of Sunday opening, while 2,412 societies and 501,705 members voted against such opening; and further by the opinion of such men as Broadhurst and Mandella, who were originally workingmen, and stand in the House of Commons as representatives of that class. Both these men opposed the motion before Parliament to open national museums and libraries on the day of rest, the stand taken by them largely influencing the vote (208 to 84) which defeated the measure.

Summing up the objections, we would say that Sunday opening is opposed by many of our best citizens because—

1. It compels additional Sunday labor.
2. It tends surely to secularize the Sabbath.
3. The workingman does not want it.

These various objections will appear to us weak or weighty, according to our idea of Sunday itself, and in fact this discussion involves the whole Sunday question. If, therefore, we would come to an honest and reasonable conclusion, we must not shrink from facing this much-vexed and perplexing subject of dispute.

Are there not two well-defined and distinct conceptions of Sunday observance, and also two equally well-defined and distinct conceptions of libraries?

Rest from bodily labor in the strictest sense, and a day devoted to purely religious exercises, is the ideal Sunday of the Jew, the Puritan, and of a large body of Protestant Christians of our time. An investigation of our early State laws shows legislation on the subject very nearly uniform in its purpose, in its prohibitions and penalties. Ordinary work, business, travel, recreation, fishing, hunting, visiting, riding, driving cattle, walking in the fields, loitering, selling liquor, and using tobacco were restricted; churchgoing was commanded, and punishments like fines, whipping, putting in the stocks, cutting off ears, and imprisonment were rigidly inflicted. During the early days of Vir-

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<sup>1</sup> In a later article Bishop Potter favors Sunday opening of libraries. (See *Forum*, 1892, 14: 194-200.)



ginia, before the organization of the General Assembly, absence from church was visited with a night's imprisonment and a week's slavery; for the second offense, a month's slavery, and for the third, a year and a day. (See Cooke, John Esten. Virginia, 1883, p. 112.) Passing by the severity of those early days and coming down to the New England Sunday two or three generations ago, we find the same idea in a milder and more attractive form. Perhaps some of us have spent a Sabbath in one of those old New England towns where the modern spirit of inquiry and doubt has not yet penetrated. An air of peace and calm pervades the place. The churchgoing and the hymnsinging and the quiet hours for thought were a perfect heaven to a devout and aspiring soul. But this world is not made up of saints, and "the Sabbath was made for man."

Strangely enough, something in this notion of Sunday reminds one of the library of the olden time. A Sabbath stillness at all times pervaded this temple of wisdom. The object of its existence was to inspire due reverence for itself. The priest of the temple was never so happy as in the summer vacation, when every book was in its proper place on the shelves and himself the only occupant. We must not, however, make the mistake of undervaluing the influence of the old-school library. It has preserved for us the treasures of antiquity, without which our modern scholarship would have been meager; it has opened its doors to the scholar and to the man of leisure; it has, moreover, encouraged in him independence of thought during the frequent intervals in which its gates were barred. Like the old-time Sabbath, its work has been limited, because, like the Sabbath, it has existed for its own sake and not first of all for man.

The other conception of Sunday has for its primary thought the good of man, and that not of the favored few, but of all. Like its predecessor, it involves physical rest and spiritual opportunity, but is not confined to these. It provides for the growth and development of the entire man—physical, mental, social, æsthetic, moral, and spiritual. With this view, no iron code of laws can be laid down for its observance. Such a code would be subversive of its purpose; it must change as man changes, adapt itself to new surroundings, supply his fresh and varying needs, and, without arbitrary decree or provision of statute or exhortation from the pulpit, perpetuate itself and work out its glad and beneficent mission. I like Beecher's characterization of Sunday as a "parlor day," from which, of our own free will, we keep the common utensils of the kitchen, the barn, and the workshop.

Frederick Denison Maurice, whose clear spiritual eye often sees a truth obscured to more earthly visions, tells us in his *Life and Letters*—

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It is certain that we and the Romanists have each taken half the idea of Sunday, and spoiled that half; they believing it to be a day of joy, and therefore working their bodies and giving way to bodily license upon it, and we supposing it to be spiritual, and therefore making it sad. (See *Life*, Vol. I, p. 303.)



Surely this need not be. We can not be content to settle down to the conviction expressed in these words ascribed to Horace Greeley: "You must choose between the Puritan Sabbath and the Parisian Sunday; there is no middle-ground." Already leaders of religious thought point to something better. The Bampton lecture for 1860, entitled "Sunday, its origin, history, and obligation," breathes this broad and generous spirit; and the concluding chapter, "The Lord's day viewed practically," is well worth reading in this connection. The following is from an article in the *Atlantic Monthly* for 1881 (47: 537), called "The new Sunday:"

The trend of the new Sunday is in the direction of a healthier and more persuasive Christianity, not wholly nor immediately what all could wish, but enough to give one hope of better things in store. The escape from the narrow requirements of an earlier day may for the moment, even, be the taking of some steps backward. To see social and religious changes correctly one must not look at them from a local point of view alone. The present influence of Sunday is to broaden the Christian conception of the possibilities of ethical life and to uplift mankind on the physical, social, and intellectual, as truly as upon the moral and spiritual side.

Such a Sabbath would be, as Emerson called it, "the jubilee of the whole world." (See *Nature*, addresses and lectures, p. 147.)

We will let Mr. Dewey tell what is meant by the modern library idea:

With the founding of New England it was recognized that the church alone could not do all that was necessary for the safety and uplifting of the people, so side by side they built the meetinghouse and schoolhouse. Thoughtful men are to-day pointing out that a great something is wanting, and that church and state together have not succeeded in doing all that was hoped or all that is necessary for the common safety and for the common good. The school starts the education in childhood; we have come to a point where in some way we must carry it on. The simplest figure can not be bounded by less than three lines; no more can the triangle of great educational work, now well begun, be complete without the church as a basis, the school as one side and the library as the other. (See *Lib. Notes*, 3: 339.)

With this motive fresh in our minds, shall we not agree that the library aims to do for the community by the aid of books and personal contact what the Sabbath supplies by a wider circle of influences, both taking the mass of people as they are and working to build them up in all that tends to noble life? If this be true, it is most natural and practical that they should use each other and work hand in hand toward the same end.

To put it more definitely, there is a large class of people who will not go to church and who will not read the Bible who could be reached by the means of grace afforded by a library. There is, especially in cities, a multitude of men without homes to whom Sunday is rather a day of temptation than of rest. As the Christian Union expresses it—

What can a Christian community do for this great class (on Sunday) better than to provide a kind of communistic substitute for home, in a room furnished with pictures and with books, warmed and lighted and made comfortable staying places?

The Rev. Plato Johnson, a pseudonymous writer in the New York Independent of February 23, 1882, gives us this idea in terse and expressive language:

Dere ain't no use in openin a libry fer de pore, wen noboddy can cum to it, an' shettin it tite, wen ebberybody wants ter go in. Ef you opens dat libery on de Sunday and invites all de pore to cum in and git a book so interestin dat dey want want ter go out an git a drink, de fuss pusson dat will make a row 'bout it an say 'taint rite, will be de ole gen'leman hisself wot lives below.

Nor does this imply giving people culture in place of religion. Baptists are not open to the charge of preaching the religion of culture, but one of their ministers makes an earnest appeal for Sunday opening. He says:

Anything that helps the mind to better thoughts and keeps the eyes from vile and gross objects is not a hindrance but a help to the religious life, and will lead there if persisted in.

Besides those who need to be enticed to a library on Sunday, there are many intelligent workingmen, who have already begun the work of self-improvement, who find Sunday the only time for reading or study; do not deny them a Sunday afternoon in a quiet place relieved from the distractions of the home. Perhaps you have no right to deny them on their only day of leisure that which they are taxed for as a common good. True, a certain number can utilize their evenings for this purpose, but a hard day of manual labor more often leaves a man quite unfitted for mental effort. We hear a great deal now about semi-nary work; it is the latest phase of the library movement. When will you do such work for the unprivileged classes except on Sunday, and what could be a more hopeful way of reaching the masses, the vexed problem of the church of to-day? Speaking of a similar work in the museums, Heber Newton says:

How beautiful a ministry of brotherhood to be accepted, nay, even solicited, in the holy name of religion! Alas! that it is religion itself, the very religion of Jesus of Nazareth, which, with an earnestness worthy of a more intelligent discipleship, is barring this step forward in the intellectual progress of hosts of our fellow-citizens. (See his sermon, "Superstition of the Sabbath," Day Star, Feb. 4, 1886.)

In the light of what has been said, we may perhaps return to the three objections against Sunday opening.

We must admit the first; it does increase Sunday labor; though, as we shall show later, the increase is very small, probably less in proportion to the number served than is necessitated by church services. But our new view of the purpose of Sunday throws new light on this fact. The question to be asked is, Will the step proposed conduce to the real elevation of the community? Since, then, by the labor of a few the majority can be helped to the right and legitimate use of Sunday, the first objection falls to the ground.

The second argument, that it tends to secularize the Sabbath, is unanswerable. Such an objection is always unanswerable. Doubtless

the first man in New England who asserted that he had a moral, and ought to have a legal right to take a quiet walk in the fields of a Sunday afternoon had this same objection flung in his face. Unquestionably it does have that tendency, but what shall we do about it? We are not willing to go back to the Puritan Sabbath, we do not want the Parisian Sunday; for fear of the one, must we cling to such relics of the superstitions of the other as are left to us? Must we not rather judge each case on its merits, ask each new innovation if it can bring us enough good to balance the risk, ask if its spirit is that of the ideal Sabbath for man? Judged by that standard, Sunday opening has come to stay.

The third objection was that the workingman does not want Sunday opening. The Nineteenth Century for 1884 (15: 416-34) goes at length into this matter. It claims that the statistics referred to in Bishop Potter's article are of no value, since they were worked up by "The Lord's Day Rest Association," which put the question, "Do you approve the amendment for opposing the increase of Sunday labor?" thus placing a totally false issue before the workingmen; and against these is pitted another set of figures obtained by a vote taken previous to the other vote, in which there was a powerful majority in favor of Sunday opening. It is difficult for us to weigh the merits of these votes. Probably we would best disregard them both. We may notice, however, that those who voted against Sunday opening appear to have done so, not because it seemed undesirable in itself, but from fear that it might lead to enforced Sunday labor, a point which we have tried to answer above.

Should we wait the demand of the laboring man in providing means for his growth and uplifting? Surely it is more reasonable to expect that those who, through no merit of their own, have been endowed with richer gifts and opportunities, should make it their constant study and find it their highest joy to anticipate his aspirations.

Thus far we have been viewing this subject theoretically. From a more practical standpoint, what has been already done toward solving the problem?

The appended statistics are a part of those collected by the library school as the A. L. A. committee for the World's Columbian Exposition, 1893.

Though prepared with considerable care, great caution should be used in deducing conclusions. In spite of the proverbial veracity of figures, they do not always prove what they seem to do—e. g., N—— is put down as a library not open on Sunday. It is a well-known and well-managed library, and the inference is that its example counts against opening. But if we find later that it is a town made up almost entirely of beautiful homes, whose owners have libraries of their own, we put it down on a list of libraries not needing Sunday opening, and therefore not affecting the argument. In a few cases Sunday opening has been tried and failed, because introduced by outside pressure and



lacking the librarian's cooperation; sometimes a progressive minority have brought it about prematurely and very unwisely. A fair presentation of the exact status of Sunday opening in American libraries would involve a great outlay of time. The investigator should know each library, its work, and the spirit of its work, the town and the people who make up its constituency. Still, the figures and facts presented, though unsatisfactory, indicate the trend of opinion, and at least serve as a basis for further study.

For purposes of comparison the list has been divided into three classes:

(1) Free libraries, including those supported by the city, like the Boston public, and also those maintained by private philanthropy, of which the Astor and the Providence Public are examples. Libraries partly free and partly subscription have been counted free.

(2) Subscription libraries, both the mercantile and the athenæum types, and all variations of the two.

(3) College libraries.

Libraries reporting.	Number.	Not open.	Open.	Success-ful.	Unsuc-cessful.	Doubtful.	Tried and given up.
Free .....	121	63	53	.....	.....	.....	.....
Subscription .....	15	9	6	.....	.....	.....	.....
College .....	36	26	10	.....	.....	.....	.....
Total .....	172	103	69	55	1	6	11
Free and subscription .....	136	77	59	.....	.....	.....	.....

Hours range mostly from 2 to 6 or 9 p. m. Of the 69 reading rooms or libraries reported open, 12 have morning hours.

So many have failed to state extra expense that the average has not been taken. Reference to the statistics will show that, so far as given, the cost compared to running is surprisingly small.

The answers to the questions, *Why is your library not open?* *What are your objections?* are substantially three. Expense; no call for it; religious objections.

It is significant that of the 69 libraries open, 55 call it a success. Of these 15 are not content with a simple affirmative, but express the fact in such words as *perfectly, decidedly, entirely*.

As an indication of favorable sentiment, I cite a few sentences taken from printed reports and from private letters of librarians:

[W: F: Poole.]

I fully agree with the position you have taken in regard to Sunday opening. I have for twenty years been theoretically and practically in favor of Sunday opening.

[S: S. Green, L. J., 9: 85-86.]

It is my opinion that it does no harm, but, on the contrary, much good, to have the reading rooms open on Sunday. I am confident that the cause of good morals has been largely promoted by having them open on this day of the week.

[J. N. Larned, L. J., 12: 230: 13: 135.]

The results [of Sunday opening] have more than vindicated the wisdom of those who advocated this measure, and have removed, I think, whatever slight hesitations there may have been in conservative minds.

The opening of the reading room on Sunday has been continued through the year with increasing satisfactoriness. Generally speaking, the use of the rooms is only limited by the number of seats in them.

[E. M. Coe, N. Y. Free Circulating Library.]

The report of the Sunday work seems to answer every objection which can be made to Sunday opening.

[F. M. Crunden, St. Louis Public Library.]

The Sunday opening here is an unquestionable success.

[A. W. Whelpley, Cincinnati Public Library.]

The Sunday library is a blessing in this community. It will only require a look through the establishment on Sunday to convince even an extreme fanatic that the good work done here supplements well the good work done from the pulpit.

[Bridgeport Public Librarian, L. J., 10: 405.]

We consider the Sunday opening of the library as our most active missionary work.

[Mellen Chamberlain, librarian Boston Public Library.]

Sunday opening I regard as a success.

[Melvil Dewey, director N. Y. State Library.]

I began my study of this question with strong prejudice against it, but have been forced to believe in Sunday opening. In some cases it may not be wise, but nearly every experiment has proved a marked success, and its best friends are those who have tried it.

Not a few librarians, thoroughly convinced of the wisdom of Sunday opening, are held back from motives of expediency. Miss Hager, of Burlington, Vt., librarian of the Fletcher Free Library, told me at the last conference:

We need Sunday opening; it would give us a chance to reach a class that I want the library to get hold of, but it would not be safe to suggest it; the people who support the library would be shocked beyond measure at such a proposal. It would only cripple our present work to attempt such an extreme measure.

The case is further complicated by the question of cost. In the larger libraries this is of minor importance; but in little libraries, where every penny counts, and where it involves at least one extra assistant, the case is different. One thing is certain, if one librarian does all the work and devotes her entire energy to the library, it is quite out of the question to expect or even to allow her to do Sunday work. It has been suggested that voluntary assistance may solve this difficulty. It seems to me probable that in some towns a woman of culture and leisure might be found glad to take this up as missionary work, and surely no one need desire a more satisfactory outlet for humanitarian zeal, but it is doubtful if this method could be depended on as a practical way out of the difficulty.

These two obstacles, prejudice and lack of means, prevent Sunday opening in a large number of the smaller libraries, and it would no doubt be folly to attempt a forcing process. It must be brought about through gradual change of public sentiment, and may be hastened by anything that tends to broaden and liberalize that sentiment, and, when the time is ripe, by taking advantage of any propitious occasion for introducing it.

I conclude that public libraries, for use of books in the building, ought to be open on Sunday. I can see no reason for circulating books on that day. The objections urged against such opening are of little weight, compared with the urgent claims of the unprivileged classes for such a work as the highest conception of Sunday and the ideal library spirit call on us to do. It has been in successful operation for years in many prominent American and in several English libraries. Just the people needing to be reached by Sunday opening respond to the opportunity and prove the demand by a constant and growing use of such privileges. It is approved by most of our leading librarians, and always gets a good word from the *Library Journal*. The obstacles of prejudice and limited means in the smaller libraries may be overcome by time.

The conclusive word on this subject was, I think, said by Mr. Winsor at the L. A. U. K. in 1877 (see *L. j.* 2: 274; L. A. U. K. proceedings, 1877, p. 171):

I think the hours that a library is open must correspond to the hours in which any considerable number of people will come to it. All night, if they will come all night; in the evening certainly, and on Sundays by all means. We have fought and are fighting the "Sunday question" as to libraries in America. People who were once tortured with the idea now accept it. I appreciate the merits of conservatism; I do not believe in forcing, but I do believe in ripening. In any community the time for benefactions and philanthropy on Sunday will ripen in the end.

I hope to continue the study of this subject, and will gratefully welcome any bit of experience throwing new light on it, whether it confirms or contradicts present conclusions. Address M. S. Cutler, New York State Library, Albany, N. Y.



## Statistics.

[\* Libraries not reporting, 1889 statistics are given.]

Name of library.	Location.	If open—date?	Reading room open?	Reference depart- ment open?	Circulating depart- ment open?	Use.				Hours of Sunday opening.	Extra as- sistants employed?	Is it a dif- ferent class from daily patrons?	Extra ex- pense.	Do you consider it a success?	
						Reading room.	Reference department.	Sunday.	Daily.						
Free Libraries.															
Akron public.....	Akron, Ohio.....		No.	No.	No.										
Apprentices *.....	New York City.....		No.	No.	No.										
Astor.....	do.....		No.	No.	No.										
Ayer public.....	Ayer, Mass.....		No.	No.	No.										
Bangor public.....	Bangor, Me.....		No.	No.	No.										
Batavia union school.....	Batavia, N. Y.....	1891	Yes.	Yes.	No.					2 to 6 p. m.	No.	No.	Small, for heat and lights.	Yes.	
Berkshire Athenæum.....	Pittsfield, Mass.....		Yes.	Yes.	No.	Large				2 to 6 p. m.	No.	No.	Heat and lights.	Decidedly.	
Beverly public.....	Beverly, Mass.....		No.	No.	No.										
Birchard.....	Fremont, Ohio.....		No.	No.	No.										
Boston public.....	Boston, Mass.....	1872 1890 <sup>2</sup>	Yes.	Yes.	Yes.										
Bridgeport public *.....	Bridgeport, Conn.....	1882	Yes.	Yes.	No.	262				2 to 10 p. m. 1 to 9 p. m.	Yes.	No.	\$3,000 a year. \$7 per week.	Unquali- fiedly. Yes.	
Bronson.....	Waterbury, Conn.....		No.	No.	No.										
Brookline public <sup>1</sup> .....	Brookline, Mass.....		No.	No.	No.										
Brooklyn X. M. C. A.....	Brooklyn, N. Y.....		Yes.	Yes.	No.					2 to 8 p. m. 1 to 6 p. m.	No.	No.	None	Decidedly.	
Buffalo.....	Buffalo, N. Y.....	1887	Yes.	Yes.	No.										
Cambridge public.....	Cambridge, Mass.....		No.	No.	No.										
Carnegie free.....	Allegheny, Pa.....	1890	Yes.	Yes.	No.	500	350	65	45	1 to 10 p. m.	Two	Yes.	\$500 a year.	Yes.	
Carnegie free.....	Braddock, Pa.....		No.	No.	No.										
Chicago public *.....	Chicago, Ill.....	1874	Yes.	Yes.	No.	425		127		9 a. m. to 6 p. m. 8 a. m. to 9 p. m.	Four	Yes.	\$10 a week.	Yes.	
Cincinnati public *.....	Cincinnati, Ohio.....		Yes.	Yes.	No.					1 to 9 p. m.	Yes.	Yes.	\$1,000 a year. \$3 a week.	Perfect. Decided.	
Cleveland free public.....	Cleveland, Ohio.....	1882	Yes.	Yes.	No.			204	159						
Columbus public.....	Columbus, Ohio.....		No.	No.	No.										
Dayton public.....	Dayton, Ohio.....		No.	No.	No.										
Dedham public.....	Dedham, Mass.....		No.	No.	No.										
Denver mercantile.....	Denver, Colo.....	1886	Yes.	Yes.	No.	71	176	32	56	2 to 9 p. m. 9 a. m. to 9 p. m.	No.	Yes.	None	Yes.	
Denver public.....	do.....	1889	Yes.	Yes.	Yes.						No.	Yes.	None	Yes.	
1 Reading room.															
2 Library.															

<sup>1</sup>Reading room.<sup>2</sup>Library.







## Statistics—Continued.

[\* Libraries not reporting, 1889 statistics are given.]

Name of library.	Location.	If open—date?	Reading room open?	Reference depart- ment open?	Circulating depart- ment open?	Use.				Hours of Sunday opening.	Extra as- sistants employed?	Is it a dif- ferent class from daily patrons?	Extra ex- pense.	Do you consider it a success?
						Reading room.	Daily.	Sunday.	Reference department.					
<b>Free libraries—Cont'd.</b>														
Philadelphia Apprentices'	Philadelphia, Pa.		No.	No.	No.				Daily.					
Plainfield public.	Plainfield, N. J.		No.	No.	No.									
Plymouth public.	Plymouth, Mass.		No.	No.	No.									
Poughkeepsie city.	Poughkeepsie, N. Y.		No.	No.	No.									
Pratt Institute*.	Brooklyn, N. Y.		No.	No.	No.									
Providence public.	Providence, R. I.	1880	Yes.	Yes.	No.					2 to 9 p. m.	Yes.	Heating, lighting; also \$101.92 a year.		In every re- spect.
Reynolds .....	Rochester, N. Y.		No.	No.	No.									
Riverside public.	Riverside, Cal.		No.	No.	No.									
Rogers free.	Bristol, R. I.		No.	No.	No.									
Rutland free.	Rutland, Vt.	1891	Yes.	Yes.	No.	15		Slight.		2 to 5 p. m.	Yes.	\$75 a year.		Hardly. Yes.
Sacramento free public.	Sacramento, Cal.	1879	Yes.	Yes.	Yes.			Same on Sundays.		11 hours.	No.			
St. Johnsbury Athenæum.	St. Johnsbury, Vt.		No.	No.	No.									
St. Louis public.	St. Louis, Mo.	1872	Yes.	Yes.	No.	274.9	515.7			2 to 9 p. m.	No.	Heating and lighting.		Decidedly.
St. Paul public.	St. Paul, Minn.	1882	Yes.	Yes.	No.	20	60			9 a. m. to 9 p. m.	Yes.	\$2 a Sunday.		Yes.
Salem public.	Salem, Mass.	1889	Yes.	Yes.	No.	65	100	10	17	2 to 8 p. m.	Yes.	\$2.75 a Sun- day.		Reading room, Yes; Reference room, doubtful. Yes.
San Diego free public.	San Diego, Cal.	1882	Yes.	Yes.	Yes.	30	65			1 to 5 p. m.	No.	None		Yes.
San Francisco free*.	San Francisco, Cal.		Yes.	Yes.	Yes.	55	188	109	179	1 to 5 p. m.	No.	None		Yes.
Santa Barbara free public.	Santa Barbara, Cal.	1882	Yes.	Yes.	Yes.					2 to 5 p. m.	Sometimes	None		Yes.
Scoville Institute.	Oak Park, Ill.		No.	No.	No.									
Sioux City public.	Sioux City, Iowa.	1893	Yes.	No.	No.	200	100			12 to 7 p. m.	No.			Yes.
Somerville public.	Somerville, Mass.		No.	No.	No.									
Southbridge public.	Southbridge, Mass.		No.	No.	No.									
Springfield City Library Association.	Springfield, Mass.	1890	Yes.	Yes.	No.	71	117			1 to 6 p. m.	No.	Heat and lights and \$1.25.		Reading room, Yes. Reference depart- ment, No.

Stockton public.....	Stockton, Cal.....	Yes.	No.	140	140	140	9 a.m. to 9 p.m.	No.	Yes.	Small	Most, em- phatically.
Taunton public.....	Taunton, Mass.....	No.	No.	No.	No.	No.	2 to 5 p.m.	No.	Yes.	None	Yes.
Terre Haute public.....	Terre Haute, Ind.....	Yes.	No.	No.	No.	No.	2 to 6 p.m.	One.	Yes.	\$12 a year.	Yes.
Toledo public.....	Toledo, Ohio.....	Yes.	Yes.	No.	No.	No.	2 to 6 p.m.	One.	No.	\$5 a month.	Yes.
Topoka public.....	Topoka, Kans.....	Yes.	Yes.	No.	No.	No.	2 to 6 p.m.	One.	No.		
Troy Young Men's Association.	Troy, N. Y.....	No.	No.	No.	No.	No.					
Tufts.....	Weymouth, Mass.....	No.	No.	No.	No.	No.					
Union for Christian Work.	Brooklyn, N. Y.....	No.	No.	No.	No.	No.					
Wagner Free Institute of Science.	Philadelphia, Pa.....	No.	No.	No.	No.	No.					Still an ex- periment.
Waltham public.....	Waltham, Mass.....	Yes.	No.	No.	No.	No.	1 to 6 p.m.	One.	Yes.	Assistant's salary.	
Warren County.....	Monmouth, Ill.....	No.	No.	No.	No.	No.					
Warwick free.....	Warwick, Mass.....	No.	No.	No.	No.	No.					
Watertown free public.....	Watertown, Mass.....	No.	No.	No.	No.	No.					
Winsor Library Association.	Winsor, Vt.....	No.	No.	No.	No.	No.					
Woburn public.....	Woburn, Mass.....	No.	No.	No.	No.	No.	2 to 9 p.m.	Yes.	Yes.	\$350 a year.	Decidedly.
Worcester free *.....	Worcester, Mass.....	Yes.	Yes.	No.	No.	No.					
<b>Subscription Libraries.</b>											
Beardsley.....	West Winsted, Conn.....	No.	No.	No.	No.	No.					
Boston Athenæum.....	Boston, Mass.....	(1807-11) { 1889-2 } Yes.	Yes.	No.	No.	No.	(Reading room { 12 to 10; refer- ence, 12 to 6.	Yes.	No.	\$40.	
Brooklyn.....	Brooklyn, N. Y.....	1875	Yes.	No.	No.	70	2 to 6 p.m.	One.	No.	\$5 a month.	Moderate.
Easthampton public.....	Easthampton, Mass.....	No.	No.	No.	No.	No.	2 to 9 p.m.	Two.	Better class	\$15 a month.	Decidedly.
Kansas City public.....	Kansas City, Mo.....	1884	Yes.	Yes.	Yes.	100	8.30 a.m. to 9 p.m.	No.	No.		Yes.
Middlesex Mechanical As- sociation.	Lowell, Mass.....	1825	Yes.	No.	No.	No.					
New Britain Institute.....	New Britain, Conn.....	No.	No.	No.	No.	No.					
New Haven Young Men's Institute.	New Haven, Conn.....	No.	No.	No.	No.	No.					
Philadelphia mercantile.....	Philadelphia, Pa.....	1871	Yes.	Yes.	No.	No.	9 a.m. to 10 p.m.	Regular as- sist- ants, with ex- tra pay.	No.	\$200....5....	Hardly.
Redwood.....	Newport, R. I.....	No.	No.	No.	No.	No.					
St. Louis mercantile.....	St. Louis, Mo.....	No.	No.	No.	No.	No.					
San Francisco Mechanical Institute.	San Francisco, Cal.....	1883	Yes.	Yes.	No.	50	12.30 to 4.30 p.m.	One.		\$10 a month.	Yes.
Seymour.....	Anbun, N. Y.....	No.	No.	No.	No.	No.					
Skaneateles Library Asso- ciation.	Skaneateles, N. Y.....	No.	No.	No.	No.	No.					
Union (W. C. T. U.).....	Trenton, N. J.....	No.	No.	No.	No.	No.					

<sup>1</sup> Reference.<sup>1</sup> Reading.





[illegible]

## Statistics.

[\* Libraries not reporting, 1889 statistics are given.]

Name of library.	Location.	Ever considered?	Why is it not open? Objections.	State of sentiment.	Have you tried it and given it up?	Reasons.	Remarks.
<b>Free Libraries.</b>							
Akron public.....	Akron, Ohio.....	No.....	Extra expense chiefly.....	Has not been sounded.....	No.....	.....	Library should be open Sundays; probably will be when funds permit.
Apprentices' *.....	New York City.....	Yes.....	No need; librarian needs rest.....	Divided.....	.....	.....	Sentiment in favor of opening popular libraries.
Astor.....	do.....	Yes.....	Library of research used chiefly on working days.....	Varying.....	No.....	.....	Consider the suggestion excellent. Shall consider it.
Ayer public.....	Ayer, Mass.....	No.....	No apparent public demand.....	Divided.....	.....	.....	Board in favor.
Bangor public.....	Bangor, Me.....	Yes.....	Question never raised.....	Pavorable.....	Yes.....	Tax on one librarian; small attendance.....	.....
Batavia union school.....	Batavia, N. Y.....	No.....	Little demand.....	Against.....	.....	.....	.....
Beckshire Athenaeum.....	Pittsfield, Mass.....	Yes.....	.....	.....	.....	.....	.....
Beverly public.....	Beverly, Mass.....	No.....	.....	.....	.....	.....	.....
Birehard.....	Fremont, Ohio.....	Yes.....	.....	.....	.....	.....	.....
Boston public.....	Boston, Mass.....	.....	.....	.....	.....	.....	.....
Bridgeport public *.....	Bridgeport, Conn.....	Yes.....	Public does not ask for it.....	.....	No.....	.....	.....
Bronson.....	Waltham, Conn.....	Yes.....	Voted against in town meeting.....	.....	.....	.....	.....
Brookline public.....	Brookline, Mass.....	.....	.....	.....	.....	.....	.....
Brooklyn Y. M. C. A.....	Brooklyn, N. Y.....	.....	.....	.....	.....	.....	.....
Buffalo.....	Buffalo, N. Y.....	.....	.....	.....	.....	.....	.....
Cambridge public.....	Cambridge, Mass.....	Yes.....	Waiting for public demand.....	Against.....	.....	.....	.....
Carnegie free.....	Allentown, Pa.....	.....	.....	.....	.....	.....	.....
Carnegie free.....	Braddock, Pa.....	Yes.....	.....	.....	Yes.....	Not patronized.....	Ready to open when there is call.
Chicago public *.....	Chicago, Ill.....	.....	.....	.....	.....	.....	.....
Cincinnati public *.....	Cincinnati, Ohio.....	.....	.....	Universal approbation.....	.....	.....	.....
Cleveland free public.....	Cleveland, Ohio.....	.....	.....	.....	.....	.....	.....
Columbus public.....	Columbus, Ohio.....	.....	.....	.....	Yes.....	Reading room given up.....	.....
Dayton public.....	Dayton, Ohio.....	No.....	.....	Quick.....	.....	.....	.....
Dedham public.....	Dedham, Mass.....	Yes.....	Not considered necessary.....	Just stirring in that direction.....	.....	.....	.....

Denver mercantile	Denver, Colo.	.....	.....	.....	.....	.....	Should not favor closing.
Denver public	do.	.....	.....	.....	.....	.....	
Detroit public	Detroit, Mich.	.....	.....	.....	.....	.....	
Dover public	Dover, N. H.	.....	.....	.....	.....	.....	
Duluth public	Duluth, Minn.	.....	.....	.....	.....	.....	
Elyria	Elyria, Ohio	Yes.	Expensive and not necessary.	.....	.....	No.	
Enoch Pratt free	Baltimore, Md.	Yes.	No demand	.....	.....	No.	
Fitchburg public	Fitchburg, Mass.	.....	.....	.....	.....	.....	
Fitz public	Chelsea, Mass.	.....	.....	.....	.....	.....	
Fletcher free	Burlington, Vt.	Yes.	.....	.....	.....	.....	
Franklin Institute	Philadelphia, Pa.	Yes.	Library is in business part of city.	.....	.....	Yes.	Four readers a Sunday.
Gloversville free	Gloversville, N. Y.	Yes.	.....	.....	.....	.....	
Grand Rapids public school	Grand Rapids, Mich.	.....	.....	.....	.....	.....	
Grosvenor	Buffalo, N. Y.	Yes.	Not necessary.	.....	.....	No.	
Hackley	Muskogon, Mich.	.....	.....	.....	.....	.....	
Harris Institute	Woonsocket, R. I.	Yes.	Probably no popular demand.	.....	.....	.....	
Hartford Library Association.	Hartford, Conn.	.....	.....	.....	.....	.....	
Haverhill public	Haverhill, Mass.	.....	.....	.....	.....	Yes.	Not appreciated.
Howard memorial	New Orleans, La.	.....	.....	.....	.....	.....	
Indianapolis public	Indianapolis, Ind.	.....	.....	.....	.....	.....	
Ipswich public	Ipswich, Mass.	Yes.	Not necessary.	.....	.....	No.	
Jackson free public	Jackson, Mich.	Yes.	No call for it.	.....	.....	Yes.	No demand.
Kalamazoo public	Kalamazoo, Mich.	.....	.....	.....	.....	.....	
La Crosse public	La Crosse, Wis.	Yes.	Not demanded.	.....	.....	.....	
Lafayette public	Lafayette, Ind.	.....	.....	.....	.....	.....	
Lancaster town	Lancaster, Mass.	No.	No call for it.	.....	.....	.....	
Lawrence public	Lawrence, Mass.	Yes.	Expense	.....	.....	Yes.	Expense
Lawson McGhee	Knoxville, Tenn.	.....	.....	.....	.....	.....	
Leicester public	Leicester, Mass.	Yes.	No call for it.	.....	.....	.....	
Los Angeles public	Los Angeles, Cal.	.....	.....	.....	.....	.....	
Lowell city	Lowell, Mass.	Yes.	Expense	.....	.....	.....	
Lynn free public	Lynn, Mass.	Yes.	Want of suitable accommodations.	.....	.....	.....	
Manchester city	Manchester, N. H.	Yes.	.....	.....	.....	No.	

Open 1 year Sunday, from 1-30 to 5.30. Discontinued because little used.

Librarian believes every library should be open on Sunday.

Tried opening circulating department also, but found no advantage in it.

Open April, 1886-June, 1887, Sunday, from 2 to 6 p. m. Little used.

Library situation such that it has not been convenient. May open Sundays when we move.

Experiment tried in 1885, for six months.

Trustees regret lack of demand for Sunday opening.

May open reference room in new building.

Matter now pending with the trustees. Will probably be decided favorably.



## Statistics—Continued.

[\*Libraries not reporting, 1889 statistics are given.]

Name of library.	Location.	Ever considered?	Why is it not open? Objections.	State of sentiment.	Have you tried it and given it up?	Reasons.	Remarks.
<b>Free Libraries—Con'd.</b>							
Medford public.....	Medford, Mass.....	Yes.	Call not sufficient to warrant expense.	.....	No.	.....	.....
Milwaukee public.....	Milwaukee, Wis.....	.....	.....	.....	.....	.....	.....
Minneapolis public.....	Minneapolis, Minn.....	.....	.....	.....	.....	.....	.....
New Bedford free *.....	New Bedford, Mass.....	Yes.	No demand.	.....	.....	.....	.....
New Brunswick free public.....	New Brunswick, N. J.....	Yes.	Majority of trustees object.	Conservative.	.....	.....	.....
New Haven free public.....	New Haven, Conn.....	.....	.....	.....	.....	.....	.....
New London public.....	New London, Conn.....	No.	Conservative city.	Decidedly opposed.	No.	.....	.....
New York free circulating.....	New York City.....	.....	.....	Favorable.	.....	.....	.....
New York Y. M. C. A.....	do.....	No.	.....	.....	.....	.....	.....
New York Y. W. C. A.....	do.....	.....	.....	.....	.....	.....	.....
Newark free public.....	Newark, N. J.....	.....	.....	.....	.....	.....	.....
Newberry *.....	Chicago, Ill.....	Yes.	Same objections as to any violation of the fourth commandment.	Opposed.	No.	.....	.....
Newburg free.....	Newburg, N. Y.....	.....	.....	.....	.....	.....	.....
Newburyport public.....	Newburyport, Mass.....	No.	.....	.....	.....	.....	.....
Newton free.....	Newton, Mass.....	No.	.....	No general demand.	No.	.....	.....
Norman Williams public.....	Woodstock, Vt.....	Yes.	Not necessary.	Probably opposed.	.....	.....	.....
North Adams public.....	North Adams, Mass.....	Yes.	.....	.....	.....	.....	.....
Northampton public.....	Northampton, Mass.....	.....	.....	.....	.....	.....	.....
Omaha public.....	Omaha, Nebr.....	.....	.....	.....	.....	.....	.....
Osterhout *.....	Wilkesbarre, Pa.....	.....	.....	.....	.....	.....	.....
Otis.....	Norwich, Conn.....	.....	Subject not discussed.	Opposed.	.....	.....	.....
Pawtucket free public.....	Pawtucket, R. I.....	.....	.....	.....	.....	.....	.....

Reading room used more, and reference department less than on week days. 27 churches and Y. M. C. A. meet Sunday once.

Open Sundays from October to May.

Sunday opening forbidden by proviso in deed of gift from subscribers to the city.

Question has been favorably considered.

Does not reach those who have not time to come week days.

Librarian favors it.

Will be discussed fully when extension is completed.

Books of special interest placed on tables for Sunday use.

Peabody Institute.....	Baltimore, Md.....	Yes.	Not called for.....	Chiefly opposed.....	No.	Not a library for mere readers.
Peck.....	Norwich, Conn.....	Yes.			No.	
Peoria public.....	Peoria, Ill.....					
Philadelphia Apprentices.....	Philadelphia, Pa.....	Yes.				Will probably be open sometime. Librarian approves.
Plainfield public.....	Plainfield, N. J.....	No.				
Plymouth public.....	Plymouth, Mass.....	Yes.		Opposed.....	No.	
Poughkeepsie city.....	Poughkeepsie, N. Y.....			do.....	Yes.	Patronage not sufficient.
Pratt Institute *.....	Brooklyn, N. Y.....	Yes.	None, if extra service.....	Favorable.....		Large use of technical and art publications.
Providence public.....	Providence, R. I.....					Will open Sundays in course of time.
Reynolds.....	Rochester, N. Y.....	Yes.				
Riverside public.....	Riverside, Cal.....	Yes.				Trustees must be members of one of four denominations, Baptist, Congregationalist, Episcopal, Methodist.
Rogers free.....	Bristol, R. I.....	No.		Opposed.....		Do not succeed in attracting the class who can not use the library week days.
Rutland free.....	Rutland, Vt.....			Apathetic.....		Sunday patrons are mostly working-men.
Sacramento free public.....	Sacramento, Cal.....					
St. Johnsbury Athenæum.....	St. Johnsbury, Vt.....	No.				Formerly open all day, but not used much in morning.
St. Louis public.....	St. Louis, Mo.....					Larger number of people employed during week come to library on Sunday.
St. Paul public.....	St. Paul, Minn.....					Larger proportion of workmen and clerks.
Salem public.....	Salem, Mass.....					Use of circulating department: Sunday, 59; daily, 210.
San Diego free public.....	San Diego, Cal.....			Unfavorable comment rare.		
San Francisco free *.....	San Francisco, Cal.....					
Santa Barbara free public.....	Santa Barbara, Cal.....			No call. Probably against.		
Seaville Institute.....	Oak Park, Ill.....					
Sioux City public.....	Sioux City, Iowa.....					
Somerville public.....	Somerville, Mass.....	Yes.	Not advisable.....			Sunday opening will probably begin soon.
Southbridge public.....	Southbridge, Mass.....	Yes.	Extra expense.....			
Springfield City Library Association.....	Springfield, Mass.....					
Stockton public.....	Stockton, Cal.....			Rather against.		
Taunton public.....	Taunton, Mass.....	Yes.	Too expensive.....			
Terre Haute public.....	Terre Haute, Ind.....					
Toledo public.....	Toledo, Ohio.....			Mixed.....	No.	
Topeka public.....	Topeka, Kans.....					
Troy Young Men's Association.....	Troy, N. Y.....	Yes.	No demand. Too expensive.			Sunday readers almost exclusively of the working class.
Tufts.....	Weymouth, Mass.....	No.	No call.....			
Union for Christian Work.....	Brooklyn, N. Y.....	Yes.	Too expensive.....			

## Statistics—Continued.

[ \* Libraries not reporting, 1889 statistics are given. ]

Name of library.	Location.	Ever considered?	Why is it not open? Objections.	State of sentiment.	Have you tried it and given it up?	Reasons.	Remarks.
<b>Free libraries—Con'd.</b>							
Warner Free Institute for Science.	Philadelphia, Pa.	Yes.	Extra expense only.	Principally against.	.....	.....	Wish to encourage reading at home Sundays. In a small town Sunday opening does more harm than good.
Waltham public.	Waltham, Mass.	.....	.....	.....	.....	.....	.....
Warren County.	Monmouth, R.I.	Yes.	Opposition of patrons and supporters.	Against.	.....	.....	.....
Warwick free.	Warwick, Mass.	No.	Small town, does not need it.	Probably against.	.....	.....	.....
Watertown free public.	Watertown, Mass.	Yes.	Religious scruples.	Evangelical distrust. Liberal indifference.	.....	.....	Librarian much in favor. Would give his services a year to try it.
Windsor Library Association.	Windsor, Vt.	No.	No call for it.	Indifferent.	.....	.....	.....
Woburn public.	Woburn, Mass.	Yes.	Want of public interest.	.....	Yes.	Lack of public interest.	Board urged its use, but few people came.
Worcester free*.	Worcester, Mass.	.....	.....	.....	.....	.....	.....
<b>Subscription libraries.</b>							
Beardsley.	West Winsted, Conn.	No.	Income not sufficient.	Subject not agitated.	No.	.....	.....
Boston Athenaeum.	Boston, Mass.	.....	.....	Favorable.	.....	.....	.....
Brooklyn.	Brooklyn, N. Y.	.....	.....	.....	.....	.....	.....
Easthampton public.	Easthampton, Mass.	.....	.....	.....	.....	.....	.....
Kansas City public.	Kansas City, Mo.	.....	.....	.....	.....	.....	.....
Middlesex Mechanical Association.	Lowell, Mass.	.....	.....	.....	.....	.....	.....
New Britain Young Men's Institute.	New Britain, Conn.	Yes.	Proper time not arrived.	Orthodox, very.	No.	.....	.....
New Haven Young Men's Institute.	New Haven, Conn.	Yes.	Religious and financial.	.....	No.	.....	Would like to have library open longer Sundays.
Philadelphia mercantile.	Philadelphia, Pa.	.....	.....	.....	.....	.....	.....
Redwood.	Newport, R. I.	Yes.	Cost of extra service.	.....	No.	.....	Purpose sought was not gained.



St. Louis mercantile.....	St. Louis, Mo.....	Yes.....	Expense of heating entire building.....	Members indifferent.....	Yes.....	Small attendance.....	Building too far from residence district for Sunday attendance.
San Francisco Mechanics' Institute.....	San Francisco, Cal.....	Yes.....	Majority of members do not approve.....	Against.....	Yes.....	.....	.....
Seymour Skaneateles Library Association.....	Auburn, N. Y.....	Yes.....	.....	Against.....	.....	.....	.....
Union (W. C. T. U.).....	Skaneateles, N. Y.....	Yes.....	.....	.....	.....	.....	.....
	Trenton, N. J.....	.....	.....	.....	.....	.....	Sunday afternoon meeting of more importance.
<b>College libraries.</b>							
Amherst College.....	Amherst, Mass.....	Yes.....	.....	Favorable.....	.....	.....	Have not quite got to it. No definite objections.
Andover Theological Seminary.....	Andover, Mass.....	No.....	Not needed.....	.....	No.....	.....	.....
Bowdoin College.....	Brunswick, Me.....	Yes.....	Secularization of the day.....	Against.....	.....	.....	Tendency to introduce the European Sabbath is working ill.
Brown University.....	Providence, R. I.....	Yes.....	.....	.....	.....	.....	.....
Bryn Mawr College.....	Bryn Mawr, Pa.....	.....	.....	.....	.....	.....	.....
Buchtel College.....	Akron, Ohio.....	.....	.....	.....	.....	.....	.....
California University.....	Berkeley, Cal.....	.....	.....	.....	.....	.....	.....
Carleton College.....	Northfield, Minn.....	.....	.....	.....	.....	.....	.....
Chicago University.....	Chicago, Ill.....	Yes.....	No call for it.....	Against.....	No.....	.....	Disposed to open if there is a call for it.
Colby University.....	Waterville, Me.....	.....	.....	.....	.....	.....	.....
Columbia College.....	New York City.....	.....	.....	.....	.....	.....	.....
Cornell University.....	Ithaca, N. Y.....	No.....	Conservatism of constituency.....	Divided.....	No.....	.....	.....
Dartmouth College.....	Hanover, N. H.....	Yes.....	Not enough students present.....	.....	No.....	.....	.....
Drew Theological Seminary.....	Madison, N. J.....	Yes.....	.....	.....	No.....	.....	.....
Drexel Institute.....	Philadelphia, Pa.....	No.....	No objections.....	.....	No.....	.....	Reading room under Y. M. C. A. is open.
Hamilton College.....	Clinton, N. Y.....	No.....	.....	.....	.....	.....	.....
Hartford Theological Seminary.....	Hartford, Conn.....	Yes.....	.....	.....	.....	.....	.....
Harvard College.....	Cambridge, Mass.....	.....	All labor suspended on Sunday.....	Against.....	No.....	.....	Favor Sunday opening of reference and reading room.
Indiana University.....	Bloomington, Ind.....	No.....	No occasion.....	None expressed.....	No.....	.....	Religious institution; see no reason for opening on the Lord's day.
Iowa State University.....	Iowa City, Iowa.....	No.....	.....	.....	.....	.....	.....
Lawrence University.....	Appleton, Wis.....	.....	.....	.....	.....	.....	.....
Maine State College.....	Orono, Me.....	.....	Partly expense. Enough work during week.....	.....	.....	.....	.....
Massachusetts Institute of Technology.....	Boston, Mass.....	Yes.....	.....	.....	.....	.....	.....
Miami University.....	Oxford, Ohio.....	No.....	No demand; expense.....	.....	.....	.....	.....
Michigan University.....	Ann Arbor, Mich.....	Yes.....	Not enough money or help.....	.....	No.....	.....	.....
Nebraska University.....	Lincoln, Nebr.....	No.....	No call for it.....	.....	.....	.....	.....
Olivet College.....	Olivet, Mich.....	No.....	No need.....	.....	.....	.....	.....
Princeton College.....	Princeton, N. J.....	Yes.....	.....	Quiescent.....	.....	.....	Reasons which apply to public libraries not applicable.
Rochester University.....	Rochester, N. Y.....	No.....	No occasion.....	No demand.....	No.....	.....	.....
Swarthmore College.....	Swarthmore, Pa.....	Yes.....	.....	.....	Yes.....	Not needed.....	.....

## Statistics—Continued.

[\* Libraries not reporting, 1889 statistics are given.]

Name of library.	Location.	Ever considered?	Why is it not open? Objections.	State of sentiment.	Have you tried it and given it up?	Reasons.	Remarks.
<b>College Libraries—Continued.</b>							
Teachers' College.....	New York City.....	No.....	.....	Never discussed.....	No.....	.....	.....
Tufts College.....	College Hill, Mass.....	No.....	.....	.....	No.....	.....	.....
Union College.....	Schenectady, N. Y.....	No.....	Opposed by faculty.....	Opposed.....	No.....	.....	.....
Vassar College.....	Poughkeepsie, N. Y.....	No.....	.....	.....	No.....	.....	.....
Vermont University.....	Burlington, Vt.....	No.....	.....	.....	No.....	.....	.....
Virginia University.....	Charlottesville, Va.....	No.....	Librarian has no assistant; no demand.	Against.....	No.....	.....	.....

## EXECUTIVE DEPARTMENT.

## GENERAL SUPERVISION, INCLUDING BUILDING, FINANCES, ETC.

By F. M. CRUNDEN, St. Louis Public Library.

After providing for a treatise, "*De omnibus rebus*," President Dewey has asked me to write a supplement, "*De quibusdam aliis*." After distributing the various departments of library management for special treatment, he has assigned to me the "Executive department," which necessarily touches on all the special assignments, for there is no question in which the executive head of a library is not interested, none on which he ought not to have an influential, if not, indeed, a deciding, voice. The subheading "General supervision, including buildings, finances, etc.," does little or nothing to restrict or define, but rather confirms the interpretation I am compelled to give to my assignment.

I begin with this preface in order to forestall possible criticism for trenching on the territory of other contributors. I shall try to deal with the special topics assigned to others in a tangential manner, avoiding the details that come within the scope of their papers. But it is manifestly impossible to treat of the executive department as an abstraction. It must be dealt with concretely, with application to and exemplification from the various departments of library administration.

Again, writers are instructed to "aim not so much to contribute new material as to present a judicial digest of previous articles, papers, discussions, and specially of experience." Now, in the 17 volumes of the Library Journal, the United States Report on Libraries, Library Chronicle, Library Notes, and other repositories of bibliothecal information there is more to be found on any one of its particular applications than on the general subject assigned to me; and on broad principles there is a fairly unanimous agreement among well-informed librarians. It is when we come to particulars that differences arise. Therefore I can not well follow the instruction to divide this paper into two parts—the first stating what is generally accepted, the second the points that are still under discussion. I shall endeavor to cull from the literature of library economy the utterances of other librarians regarding the powers, duties, and responsibilities of the executive, and to illustrate and enforce these from my own experience, calling attention as I go along to questions still under debate and presenting my own views separately from the digest of other opinions.

The whole subject may be summed up in Mr. Perkins's receipt for<sup>1</sup> making town libraries successful:

Businesslike management is the whole story.

A public library for public use should be managed not only as a literary institution, but also as a business concern. The business department of educational and literary institutions is too often overlooked or undervalued. Yet it is vain to expect

<sup>1</sup>F. B. Perkins: "How to make town libraries successful." (U. S. Rept. on Public Libraries, p. 419).



the solid and permanent success of such institutions without good business management. Perhaps this truth may not be so fully recognized in the case of libraries as in that of other institutions for mental improvement; but those who are familiar with the inside history of great charities and missionary and educational enterprises—Bible and tract societies, for instance—know very well that neither faith nor works (in the religious sense of the words) would keep them going very long without accurate bookkeeping, regular hours, and efficient business supervision.

The success of any industrial enterprise depends on its executive head. A business man who doesn't know an acid from an alkali or a can from a cogwheel will run a factory successfully, while a mechanic, who can construct and control the machinery, or who invented the details of the manufacturing processes, will soon become bankrupt. Of this the times give frequent proof.

What, then, is "businesslike management?" It is that conduct of affairs that most thoroughly accomplishes the purpose of those engaged in business, viz, the making of money. This final object is achieved through the intermediate aim of pleasing and serving the public, which is the final purpose of a library. How does the business man proceed? He first considers the wants of the community in which he intends to establish his business; he would not start the same kind of factory or store in Leadville or Deadwood as in New York City.

He then selects a location. This must be adapted to the kind of business. If it is to depend for success on the general public (and such must be taken for my analogy), the store must be central and easy of access; and, of course, it will be handsomely fitted and supplied with the best fixtures for the display of goods and the latest appliances to facilitate work and render prompt service to patrons.

He stocks his store with goods that people want, not those he thinks they ought to want; but having once established himself, it will be his pleasure, and he can make it his profit, to elevate the tastes of his customers and create a demand for higher grades of goods. It seems unnecessary to add that he will buy his goods in the cheapest market, always, however, giving preference to local dealers on even terms. This not so much on sentimental grounds as for valid business reasons.

He must, of course, hire clerks and salesmen, increasing the number as his business enlarges. At first he will necessarily attend to every detail, and may have to do much routine work himself. He will, however, do as little bookkeeping and office work as possible, and seek to know and be known by his customers. While they are few he may know and, at times, serve them all, making each feel that his wishes are a special concern, and that anything wanted will be obtained if not in stock. This will make the store very popular, and it will soon be so thronged with customers that the head of the house can do no more than see that they are waited on by polite and efficient clerks. He will find more and more of his time occupied with the larger affairs of the growing business, and he will be compelled to leave more and more of the details to his assistants. By this time he will have trained someone

who can act as his lieutenant to the satisfaction of the public and his other employees, but he will never be so occupied in devising schemes for the expansion of the business that he will not be entirely approachable to customers and ready to assist all who wish to consult him as an expert, even though it may be regarding a trivial matter which a junior clerk is quite competent to attend to. He will organize his force, giving to competent persons the supervision of departments, and himself supervising all. He will learn sooner or later that cheap labor is not profitable, and will pay adequate salaries to trained and trustworthy employees. It goes without saying that he will not hire incompetent people to oblige a friend or to help his political party.

He will see that transactions in every department are accurately recorded and posted up to date, so that a statement can be had at any time on short notice. He will adopt the plan of keeping accounts that is at once, in his opinion, the simplest and surest, and that will give the greatest amount of information regarding goods and customers. He will, of course, have methods for ascertaining the wants of his customers, and will place before them and the public the latest articles in his line; and, as I have said before, he will endeavor to create a demand for the higher grades of goods.

To complete the comparison, we must suppose that the business is to be established by a board of directors representing a large number of stockholders. We must further suppose that the directors are all so absorbed in their private affairs that they can give very little time to the business of the corporation. What would they do? They would first secure the services of an expert who was also a good executive and business manager; and this manager, being intrusted with full power, would proceed as I have indicated. It is unnecessary to carry the analogy further; and it could hardly be made exact on all points because of the different end in view.

What then is the purpose of a public library? "To serve the public,"<sup>1</sup> i. e., to supply it with wholesome and instructive literature; or, as our motto puts it, "The best reading for the largest number at the least cost." What are the means necessary to secure this desired end?

First and foremost is the appointment of a good librarian, who should be chosen for executive rather than scholarly qualities.<sup>2</sup> This is essential to obtaining the other elements of success, which are—

1. A convenient location, accessible from all parts of the city. The

<sup>1</sup>See address of President S: S. Green, San Fran. Conf., Lib. J., 16: c. 1.

<sup>2</sup>The ideal executive head of a large public library should have the qualifications of both librarian and superintendent. (S: S. Green's paper on "Trustees and Librarians," at Fabyan House Conference, L. J., 15: c. 24.)

The same energy, industry, and tact, to say nothing of experience, which insure success in other vocations are quite as requisite in a librarian as book knowledge. A mere bookworm in charge of a public library is an incubus and a nuisance. (W: F: Poole, "Organization and Arrangement of Public Libraries." U. S. Spec. Repts. on Public Libraries, p. 476.)

general opinion is that it should not be on a thoroughfare; but this would hardly apply to libraries in the top stories of tall buildings. For a city of any size, branches or delivery stations are essential. Which should be chosen depends on circumstances. (See G. W. Cole's article on "Branches and deliveries," p. 709.)

2. The building should be fireproof, commodious, and so arranged as to offer the greatest accommodations to the public at the least cost for administration.

3. The rooms should be kept clean and orderly, so as to be inviting to ladies and young girls, and to the most fastidious.

4. Such an air of courtesy and cordiality should pervade the place, accompanied by so little formality, that the most diffident laboring man will feel that he is welcome and that the resources of the library are at his command.

5. The revenues of the institution should be so managed as to go as far as possible.

(a) Books, periodicals, binding, furniture, and supplies of every kind should be bought on the most favorable terms. (Here the executive in a large library may easily save or waste a sum equal to his salary.)

(b) The staff should be so organized as to give the greatest service at the least outlay.

(c) There should be an accurate but simple system of accounts with proper checks on receipts and expenditures.

6. Books should be selected judiciously, with reference to the clientage and aims of the library; readers should be encouraged to make known their wants, and these should be promptly supplied. It is generally agreed that in a public library purchases should include the literature of entertainment as well as information. This is still to some degree a mooted question.<sup>1</sup> It will, I think, be generally conceded that a public library should supply the best new books in all lines.

7. What seems the best system of classification and shelf arrangement in view of the peculiar conditions of the library should be adopted; and catalogs, card and printed, class lists, reference lists, and other aids and guides should be supplied according to the library's means. The particular scope and purpose of the library and its financial limitations being determined by the directors, the decision of all these details should rest largely with the executive.

8. A charging system<sup>2</sup> should be chosen that is best adapted to the conditions. In a library of large circulation the system chosen should be that which combines highest speed with greatest accuracy while giving the most important statistics.

(a) A minute when a crowd is waiting is more to be considered than five minutes at another time; therefore, choose a plan that involves

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<sup>1</sup> For full discussion see Miss Coe's article.  
See Miss Plummer's article.



the shortest entries while the borrower is waiting, though these may afterwards have to be supplemented by additional records.

(b) Don't let your choice be influenced by the fact that a system furnishes statistics which you don't want. Ordinarily one doesn't care to pay extra for a watch that strikes the quarter hours. Next to accuracy and speed, the chief desideratum is a minimum of requirements from the borrower. There should be as little formality as is consistent with the greatest good of the greatest number. This should be the test and touchstone on all questions.

9. The greatest freedom of access to shelves consistent with good order and safety to books. All will agree to this, though there may be wide difference in the interpretation of the qualifying phrase. The trend of opinion is undoubtedly in the direction of greater freedom even at risk of some loss and confusion.

10. Every facility of obtaining information and every inducement to study.

11. Close connection should be formed with schools, public and private, and with study clubs and classes; and the library should, when practicable, take the initiative in establishing university extension courses and promoting other agencies for encouraging intellectual activity.

12. Finally, and to sum up, every effort should be made to keep the institution before the public, to enlist all elements in its support, to induce all classes to use it. Its facilities for furnishing information should be so abundant that the student will come from far to seek its aid; its rooms should be so attractive and its supply of books so ample that the rich can not do better than use it; and its cordial welcome and freedom from oppressive forms should be such as to dispel the poor man's doubt, distrust, and mingled pride and diffidence, and make him feel that the library is his and his children's and their heirs' forever.

To what degree these requirements are fulfilled must depend chiefly on the executive head of the institution. President Melvil Dewey (*Library Notes*, vol. 1. p. 45), after enumerating the various factors of successful administration, says:

But the great element of success is the earnest moving spirit which supplies to the institution its life. This should be the librarian, though often the person who bears that name is little more than a clerk, and the real librarian is an active trustee or committee. Such librarian will shape the other factors very largely.

There is, in short, as I stated in the beginning, nothing so small or so trivial as not to require attention from the executive; and there is nothing in the highest concerns of the institution, its finances, and its general policy beyond his proper consideration and influence. It generally devolves on the executive to be the motive power as well as the guiding hand, the engine as well as the pilot. Certainly all will agree that a good executive will accomplish more with a poor building in a bad location and other drawbacks than an inefficient executive with all conditions in his favor.

I quote this significant sentence from the last report of the trustees of the Los Angeles Public Library: "The management of the library, which has been intrusted entirely to the librarian, has given great satisfaction to the board and, we believe, also to the public."

The foregoing views as to the importance of the executive embody a general consensus of opinion on the subject. The powers and duties of the librarian as executive being correlated with those of trustees, to particularize further would encroach on the territory of another contributor. I give a summary of the replies of 37 librarians to the questions: "Do the board and its committees always consult you before deciding on (a) questions of general policy; (b) methods of administration?" Twenty-two reply "yes" to both questions; of the remainder the great majority answer "usually" or "nearly always" to both questions; while a few say "no" or "generally" to the first and "yes" to the second.

The general tenor of the remarks on the questions is indicated by the following quotations:

Can not imagine any sane board doing otherwise.

Librarian should be given greatest possible latitude as to conduct of library in all its affairs.

In my opinion no administration can be a success unless the librarian or chief officer is consulted in all matters pertaining to the management.

Such an understanding would seem to be indispensable to a satisfactory administration of the library.

I should be sorry to be the executive officer of any board which did not have confidence enough in me to ascertain my opinion before taking action. In a majority of cases the initiative is naturally taken by the librarian.

Of the requirements of a successful administration above enumerated, a number are the special subjects of chapters in this manual; and some others call for no elaboration or argument.

**Buildings.**—From views heretofore expressed and generally concurred in, I cull these bits of advice to communities contemplating a public library building:

Appoint your librarian before you do anything about a building, and having obtained a competent officer leave the planning and furnishing of the library largely to him.

Don't be in a hurry to build. As a rule it is better to start in temporary quarters and let your building fund accumulate, while directors and librarian gain experience, and the needs of the library become more definite. It will also give the people the benefit of the library sooner.

When you do build make a liberal allowance for growth.

There should be provided in libraries that do not allow free access to shelves a space near the issue counter where new books or collections of best books may be displayed and freely handled by visitors, a sort of "browsing corner." In planning a library a cheerful spot should be set aside as a lunch room, with arrangements for boiling water.

The supervision of the building, of course, devolves on the librarian as executive. He may properly depute this to an assistant; and in a large library there should be an intelligent and responsible head janitor to obviate the necessity of anything more than the most general oversight. The head of the library should, however, test all supervision.

**Finances.**—In this department there is, and may well be, a wide divergence in the organization of libraries. In a great majority the librarian is not burdened with financial responsibilities. Out of 37 prominent libraries, 27 report that the finances and financial records are in charge of some one who is not an employee of the library. In 3 the books are kept by the librarian, in 6 by an assistant. This kind of bookkeeping is not profitable employment for a librarian. As a rule, he is a poor business man who has time to keep his own books. In 12 libraries the librarian acts as cashier, in 24 he does not. Fourteen libraries have definite appropriations, ranging from \$20 to \$500, to a contingent fund; 14 use desk receipts as a contingent fund; 9 have no contingent fund. In 6 there is a limit to bills payable from the contingent fund; in 24 it is left to the librarian's discretion; 7 do not pay any bills.

A librarian should have a contingent fund. It seems to make little difference, however, whether the fund consists of the petty cash receipts or a special appropriation. I should favor the latter, and whether there is a limit for bills payable from this fund or not, the librarian should, as a majority report they do, use it sparingly and strictly for the purpose indicated by its name. Receipts or expenditures from this fund should, of course, be examined by the auditing committee.

The finance department might well be made the subject of a separate paper. It is impracticable here to go into details, and it seems unnecessary to dwell on the necessity of regular monthly audits and the indorsement of vouchers by the proper officers. In the St. Louis Public Library each voucher bears three signatures, that of the chairman of the committee authorizing the expenditure, the chairman of the finance committee, and the librarian's certification to the correctness of the bill. Each check is signed by president, treasurer, and librarian. Similar rules are, I believe, observed in most libraries. In the great majority there seems to be a reasonable check against dishonesty on the part of the librarian, though several librarians confess that too much confidence is placed in their probity. The ultimate safeguard is the librarian's honesty; but for the protection of both trustees and librarian I venture to offer these suggestions:

1. The librarian who has financial responsibility should be under bond. The best bond is that of a trust company, and the library should pay for it.

2. The chief opportunity for dishonesty is in the duplication of book bills. This can be prevented, or, at least, made more difficult, by placing the accession number opposite each entry in the invoice. Whether



the additional safeguard thus secured is worth the cost in time is for each board to determine.

3. The time of the librarian is saved for more valuable work and an additional check is secured by having everything relating to the accounts, including the making out of vouchers, done by assistants, the work being, of course, supervised by the librarian.

**Fines.**<sup>1</sup>—This subject is well summed up by Mr. Utley as follows:

The main thing is to see that fines are impartially collected and faithfully reported. To this end the matter is, so far as practicable, placed in the hands of one assistant. No system can be devised which will not, in the last analysis, depend on the honesty of the individual charged with its enforcement. At least, any system of perfect check is too cumbrous and costs more than it is worth.

As Mr. Brett puts it, "the thing essential to the collection of fines without friction is absolute fairness."

My early experience gives strong confirmation of this. By observing the rule of impartiality (at the same time giving attention to the correctness of returns) the receipts in the St. Louis Public Library were doubled in a short time, while the friction was reduced to about one-twentieth part. We now take in \$1,000 a year with much less dissatisfaction than was formerly manifested over the collection of \$300.

The librarian should never cease striving to impress members with a sense of the impartiality of his administration in every respect; and he should never rest till he feels that every cent collected is honestly reported.

While looking after the revenues and the financial records, if they are intrusted to him, the librarian should keep a sharp eye on expenditures and on waste. His judgment and business ability and watchfulness may easily save his salary. In the largest libraries the difference between good and bad organization of the staff will amount to thousands of dollars; and with the meager funds that most libraries have, it is necessary for the librarian to see that every dollar is expended to the greatest advantage. He must first consider the direction in which money can be spent with greatest benefit to the institution, and then expend it in accordance with business methods. It depends on his tact and judgment whether the library obtains articles above or below market rates. It is notorious that public institutions pay higher prices for goods than private buyers. Whenever possible, competitive bids should be secured from reputable houses; and more than ordinary care should be taken to see that contracts are fulfilled and no overcharge made. It is commonly assumed that bills to a public institution will not be as sharply scanned as they would be by a business house. When objecting to an overcharge I have had the question put bluntly: "What difference does it make to you?" It is quite feasible for the librarian to utilize his acquaintance and influence among the best class of busi-

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<sup>1</sup> On collection and accounting for fines, see symposium in *Library Journal*, 16: 103-105, 137-173.

ness houses to obtain special discounts for the library. Here he will find the aid of his trustees extremely valuable; and both trustees and librarian should avail themselves of expert advice, which can easily be obtained. They will find everyone ready to give counsel and assistance to an institution which, more than any other, serves the whole public.

**Selecting and buying books.**—In most libraries the selection of books is left practically to the librarian,<sup>1</sup> and constitutes a very important duty. While it is primarily a literary function, it has a direct bearing on the management of the finances, for a dollar spent for one book is unavailable for another that may be more useful; and of two books equally desirable one may be bought for half the cost of the other.

The following quotations represent the consensus of opinion among librarians as to where the power and responsibility of securing books should be lodged. In his inaugural address as president of the L. A. U. K., before referred to, Mr. J. Winter Jones says:

The safest, and therefore the best, course is to be very careful in the choice of a librarian, and then leave the selection of books to him, subject, of course, to the control of the committee of management wherever the exercise of that control may be deemed advisable.

In an article on "Selection and selectors of books" (*L. j.* 2: 152), James M. Anderson, assistant librarian, University of St. Andrews, sums up with these two conclusions:

1. That books should be selected with strict reference to the province and needs of the library and to the character of its readers, and—
2. That books should be selected by the librarian, or by a standing committee in conjunction with the librarian.

His reasons for the second statement are that only the librarian can know the present contents of the library and the demands on it, and that committees change from year to year and the library would not grow symmetrically if the selection of books were left to them.

In amplification of number 1—it is better to have 10 copies of a book that is in demand than 1 copy of that and 9 other books that no one wants. Duplicate the best books liberally. "Better 10 copies of Tennyson than 1 of Tennyson and 1 each of nine rhymesters."

The fundamental rule never to be lost sight of is, find out what books your patrons want and buy these first.

In determining what books should be added to special departments valuable aid may be obtained from experts.

Whether a library's book fund is large or small, it is important that it be judiciously expended. Knowledge and watchfulness will make \$4,000 go as far as \$5,000 in less skillful hands. For fuller treatment of the subject by experts, I refer again to Dr. Poole's article in the United States Report, and to Mr. C. A. Nelson's "Selection and purchase of books" (*L. j.* 12: 155), also to the symposium on the selecting

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<sup>1</sup> So reported by 29 librarians out of 37.



and buying books (*L. j.* 14: 336, 372). From these sources, chiefly from the first two, is condensed the following summary of directions, representing a general, though not unanimous, consensus of opinion:

1. Buy both books and periodicals from a local dealer unless there is a decided difference in prices.

2. Don't be tempted by a larger discount to give orders to irresponsible persons.

3. Buy as much as possible from one house, so as to make your orders of consequence and thus secure better terms.

4. Utilize competition. A library should secure from 25 to 35 per cent discount.

5. Keep informed. Examine secondhand lists and auction catalogs and look out constantly for bargains.

6. Do not buy ordinary subscription books or books on the installment plan.

7. Don't anticipate revenues, and don't spend all your money at once. If you do you will miss many a bargain and have to go without books that are needed more than those you have bought.

8. Buy good but not expensive editions. Avoid flimsy paper and fine or blurred print.

Most large libraries buy chiefly through agents.<sup>1</sup> This practice is almost universal for foreign books.

Mr. J. Winter Jones says:

The employment of agents for the purchase of books is not always the most economical mode of procedure, excepting in the case of purchases at auctions, or in foreign countries where the transactions are large and extend over several countries.

The division on the minor question whether it is better to buy books in cloth or paper covers is probably fairly represented by returns from 37 libraries, 27 of which prefer cloth and 10 paper or sheets. The points in favor of cloth are that the books are ready for immediate use, and that a cloth binding marks the volume as a new book. The last argument, of course, has no weight with libraries that cover their books; but in others it is well worth consideration. Mr. Greenwood<sup>2</sup> says:

There is absolutely no economy in buying 2s. novels in sheets for 1s. 4d. and having them bound in leather for, say, 1s. 4d. extra, making the first cost of the books 2s. 8d. It is much cheaper in the end and more judicious to take the wear out of the original binding even though it be only paper boards, as there is always a risk of books being in demand, and the cost of binding them is thrown away, to say nothing of the disproportionate charge for binding thrown on the early years of the library.

I would emphasize the "Don't" regarding the purchase of subscription books from agents, especially in parts. Exception, of course, may be made in favor of works like the Century and Murray's dictionaries. There are few subscription books that can not be obtained through

<sup>1</sup>Out of 37 librarians reporting, 24, including all the larger institutions, favor employing agents.

<sup>2</sup>Thomas Greenwood, *Public libraries*, p. 379.



regular trade channels, and very few indeed that can not be bought far below the subscription price by waiting a little while.

Bargains may be obtained from secondhand dealers; but as a rule they know the value of books and put prices but little below a good library discount. The best field for bargains is the auction room, where the secondhand dealers replenish their stocks. A good rule is not to buy any old books (unless immediately needed) except at a bargain. Remember always that any one of 100 or 1,000 or perhaps 10,000 books is needed by you as much as any other. Buy the one or the ten, that you can obtain at one-half to one-tenth price.

Yet here a word of caution should be given to the zealous and conscientious librarian. In his anxiety to make the most of his book fund he may save \$10 in money at the expense of \$20 worth of time. Judgment must decide what is true and what false economy.

Books sent to newspapers for review may often be obtained at a very liberal discount.

Libraries in the same city should avoid duplicating expensive works.

Libraries with small means should not spend on a single costly work of interest to few—and seldom used by them—a sum that would buy 20, or perhaps 100, volumes that would be in constant and profitable use by many.

All the judgment and care that can be given to the finances of a library with a view to securing as large a sum as possible for books can not prevent the proportionate increase of other expenditures. Insurance, for example, may be doubled or trebled in a few years; it costs more to keep a large building clean than a small one; and with the growth and expansion of the library and its work there is necessarily a constant increase in the salary roll. Therefore, the ratio of expenditure for books has no significance unless all the circumstances are known.<sup>1</sup>

**Economics.**—Besides the larger savings that judgment and care may effect in the chief items of expenditure, there are numberless little economies which in the course of a year may reach a considerable aggregate. There is no economy in poor tools and appliances. In business it is often the latest machinery that makes the margin of profit; but rough notes may be made and figuring done on a scratch block or waste paper as well as on fine note paper. Even such intelligent and conscientious persons as librarians are sometimes wasteful. It is the executive's duty to look after the pence as well as the pounds, remembering that every dollar saved means another book. Great corporations do not scorn the income from office waste baskets. Binding<sup>2</sup> offers an excellent field for exercise of judgment and oversight in the interest of economy.

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<sup>1</sup>Reports from about 30 libraries give  $3\frac{1}{2}$  to 80 per cent for books. The last is from a library recently established. Omitting that, the average is a little above 25 per cent.

<sup>2</sup>For technical points see D. V. R. Johnston's article on binding.

In every detail it depends on the executive's judgment whether money and time (which is money) shall be wasted on unnecessary things or things of minor importance. The collating and covering of all books are illustrations. Both are unnecessary and wasteful. The latter is especially unwise as well as wasteful, and is, I am glad to say, adhered to by but few libraries. In many other details the decision must depend on circumstances, of which the librarian should be the best judge. Here, as elsewhere, the librarian should look sharply about him at all times and cultivate that sixth sense that is developed in the schoolmaster of seeing anything that is wrong. In a large library he can not give constant supervision to all details; but he should learn the art of quick and effective sampling.

**Executive and staff.**—There is no more important function of the executive than that involved in his relation to his staff. It is, indeed, the very sum and center of the executive department, for all orders of the board, as well as all action lying within the librarian's initiative, must be executed through assistants; and the effective organization and oversight of his staff is, therefore, the prime duty of the librarian as executive officer. But little has been heretofore published on the subject. The one point on which librarians are unanimous and on which all disinterested trustees must agree is that the choice of assistants should be left practically in the hands of the librarian, and that appointments and promotions should be on the basis of civil-service reform. As the resolution adopted at the Buffalo conference puts it:

Efficiency in library administration can best be obtained through the application of the cardinal principles of an enlightened civil service, viz, the absolute exclusion of all political and personal influence, appointment for definitely ascertained fitness, promotion for merit, and retention during good behavior.

In 7 libraries out of 37 reporting, the appointment of assistants is left entirely to the librarian; in 8 they are practically appointed by the librarian; in 18 the librarian suggests and the board appoints; in 2 the board appoints without consulting the librarian. To this number, I presume, may be added 2 that do not answer the question, and I do not wonder at unwillingness to confess so humiliating a fact. Appointments should be left, not absolutely, but practically, to the librarian. The absolute power may be a burdensome and dangerous responsibility for a librarian even when backed by civil-service rules. For what I regard as the best plan for securing efficient assistants I refer to Miss Kelso's explanation of her apprentice system.

Much of the success of a library, as of a business house, depends on the effective organization of the staff. But this, with the distribution of duties and the mooted questions of specialization versus all-round knowledge and training, and division of labor by kinds of work versus division by departments, and all other details come within the scope of Mr. Hill's article (p. 747). In passing I recommend careful reading of Miss Edith Clarke's article on "Departmental libraries" (*L. j.* 16: 264), which, I am inclined to think, will form the next stage in the



evolution of library organization. Thus far the process has been division along lines of work, a process of analysis which may be succeeded by a new synthesis as set forth by Miss Clarke.

I venture a few general observations from my own experience and thought.

In a library, as in a school system, everything depends on effective supervision. Whatever plan of organization is adopted, it should provide for thorough supervision through different grades up to the executive head. This is one of the principal elements of success in "running a hotel," which is, not unadvisedly, taken as the sign and synonym of executive ability.

The librarian should allow his assistants to work in their own way unless he can show that it is a decidedly inferior way. Give general directions to a messenger and see whether he has ingenuity enough to work out the details; consult with the assistant who is to have immediate charge of a piece of work, or let him devise a plan and submit it to you for approval or amendment. Everyone can work best in his own way, and will take more interest in the execution of a plan he has originated or assisted in preparing.

The librarian should take a personal interest in his assistants down to the youngest page. He should encourage them in self-improvement; he should fairly and favorably represent them to the trustees, securing, so far as possible, their due in hours, opportunities, and salaries. It also goes without saying that he should stand between his assistants and unfounded complaints or unreasonable criticism from the public. He should constantly consult with heads of departments and more or less frequently have general meetings for instruction and discussion.

**Librarian as secretary of the board.**<sup>1</sup>—Service as its secretary brings the librarian into closer relations with the governing board and I think strengthens his authority as executive. Returns from 37 libraries show 15 in which the librarian acts as secretary and 22 in which he does not; 17 think the librarian should; 13 think not; 3 are doubtful, and 4 give no answer. One librarian who is not secretary thinks such an arrangement "most desirable," adding that the relations of boards and librarians are not sufficiently cordial and confidential.

In a large library it is easy for the librarian to allow his whole time and energy to be absorbed by the details of his duties as executive to the neglect of the literary or librarian's side of his work. He should strive against this. He should not wholly sink the librarian in the director. He should not permit his executive duties to deprive him of all opportunity to act as literary and educational adviser to the public. He should spare some time and strength for reading and study for his own mental growth. This caution may be unnecessary. Up to recent years the great danger has been of the opposite extreme. The proper adjustment depends on circumstances and calls for the

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<sup>1</sup> See also F. P. Hill's article, p. 747.



exercise of judgment. In the same library the ratio will vary at different periods. The business man who keeps his books himself is likely to lose thereby three times the salary of a bookkeeper.

Colonel Higginson says: "The librarian should not have too much to do. If he does he can not look over the whole ground." Having so organized his staff as to make his work chiefly that of supervision he will have time to attend to the larger interests of the library, including the comparative study of methods. In making choice of methods and machinery he must keep in view the end and aim of the library, which is always and everywhere to serve the public—its public. He should seek methods that have been tried and proved efficient under similar circumstances, remembering that "an ounce of Vineland is better than a pound of cosmography." He should never lose sight of fundamental principles, which as President W. I. Fletcher said in his address at Lakewood (*L. j.* 14: 155), will be found "very largely along the lines of simplicity and tried effectiveness rather than along those of elaborateness and theoretically exact arrangement of details." He should be on his guard "against the twin irrationalities of an undue reverence for the ancient and an overweening ardor for novelties."

Mr. J. Winter Jones says:

The points to be aimed at in both lending and reference libraries are rapidity and accuracy of service and record. To effect this everything \* \* \* should be as simple as possible.

It does not necessarily follow that a method or system which is adapted to one library is best for all. There are no qualities which will supplement even a little technical knowledge so efficiently as good judgment and practical common sense.<sup>1</sup>

These last six words form an excellent summary of what is required in the executive department. The scope and meaning of "common sense" as applied to library management is fully and admirably shown in the address of President C. A. Cutter at the St. Louis conference. I began marking passages for quotation, but found the markings so numerous that I must content myself with an urgent recommendation of the address as a summary of sound doctrine. Like a certain cook-book that a housekeeper of forty years' experience pronounces the best she has ever seen, it deals not with particular recipes but with the fundamental principles that must underlie all library management. It is not novices alone that may profit by occasionally rereading it.

This paper has had the public library in view; but general principles are the same, and modifications will be obvious. The funds of the library may be so inadequate that a competent librarian can not be employed. The library must then depend on the volunteer work of trustees, one of whom, or a committee of whom, becomes the real executive. But to realize its highest possibilities a library should have a competent librarian as its executive head, and with the largest powers and responsibilities, able to say in his province, "Aut Cæsar aut nullus."

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<sup>1</sup> W: F: Poole, in United States Report, 1876.

It should be the aim of the executive to make his library approximate as nearly as possible to Mr. Ford's test of the perfect library (*L. j.* 18: 179), where "a verbal 'I want ——,' is followed by an instant delivery of the book"; and, as the writer said in a former paper,<sup>1</sup> "Success will depend less on choice of methods than on vigor and thoroughness of execution.

'For forms of government let fools contest;  
Whate'er is best administered is best.'

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## ACCESSION DEPARTMENT.

By GARDNER MAYNARD JONES,

Librarian, Salem Public Library, Salem, Mass.

[The writer has not thought it necessary to give the authority for each statement. The annexed bibliography gives fuller information.<sup>2</sup>]

**Scope.**—The accession department includes selection, buying, and accessioning of books—that is, the business side of the formation of the library.

**Who shall select books?**—Final authority should rest with the full board of trustees, which generally acts through a book committee. This should be composed of the members most familiar with literature but of catholic tastes, so as not to run to hobbies. But as the average

<sup>1</sup> Report on aids and guides at Milwaukee conference, 1886, *L. j.* 11: 309-30.

<sup>2</sup> One of the fullest discussions at Chicago was on this paper, and the proceedings should be read with it as supplemental.

committee can not give the proper time and thought to this work, the choice should be left practically to the librarian, who best knows the demands and needs of readers. The committee should work in harmony with him, check any tendency to whims, determine the general policy; and all purchases, unusual either in character or cost, should be referred to them. If promptness in adding new books is desired, the librarian should have authority to buy, within certain limits, between board meetings.

In large libraries the best selection is secured by cooperation of persons in charge of special departments; in college libraries, by professors. Lists of books may often be submitted to specialists for criticism and suggestion.

Readers should be requested to suggest books, either in a book or on slips provided for the purpose, and such books should be bought so far as practicable. If one reader cares enough for a book to ask for it, others may read it. By this method, the library is kept well in touch with readers.

**Selection of books.**—The Library of Congress, the British Museum, and the other great national libraries collect, rather than select, books. They aim to be complete in all departments. Special libraries, such as that of the Surgeon-General's Office at Washington, endeavor to obtain every publication in their special line.

Nearly all libraries, however, are limited in various ways, and are obliged to select carefully from the vast field of literature.

The character of the library largely determines the character of purchases. A college library buys a different class of books from a free public library, and an agricultural library differs in its needs from a theological seminary. College libraries and libraries of historical and scientific societies may be considered as special libraries (often, however, having several specialties), and they must buy with this in view.

What follows applies particularly to general libraries, both public and subscription, though much will also be useful to special libraries. Fiction buying is not considered, as this belongs to another paper.

The principal factors in selecting books are the character of readers, the greatest good of the greatest number, and the amount of available funds. The smaller the funds the more difficult is the selection.

The kind of readers should first be considered. A manufacturing town needs books on its special industries; a seaport, those on the ocean, ships, fisheries; a commercial city, those on commerce, banking, finance, political economy; a farming village, those on agriculture and domestic animals. A literary community requires a larger proportion of books on literary, historical, and art subjects. If the place contains readers of foreign languages, books should be bought for them, remembering, however, that in our country all should learn English. Popular amusements should be catered to by buying books on hunting, fishing, the theater, baseball, card games, etc. It is also necessary to



supplement the courses of instruction in the public schools and higher institutions of learning, not forgetting public museums, picture galleries, etc. If there are literary or scientific clubs, books should be bought to meet their needs. Children should be encouraged to read good books by buying interesting, well written, and accurate books of history, science, and literature, as well as good fiction. Local interest should be fostered by buying freely books on local history and science, and those by local authors. In short, the library should be the intellectual center of the place, ever striving to keep in advance of its readers, and, so far as it properly can, buying what the people demand. This principle leads to avoiding works not wanted, such as those in unused foreign languages. The librarian should keep track of coming events, and see that the library is provided with the books for which there is sure to be a future demand. He should avoid personal hobbies and be impartial on all controversial questions.

Manifestly the proportion of subjects must vary greatly in different libraries. The following is the scale adopted for the A. L. A. model library of 5,000 volumes at Chicago, according to the Dewey classification:

General works .....	100
Philosophy .....	100
Religion .....	300
Sociology .....	300
Philology .....	50
Science .....	400
Useful arts .....	300
Fine arts .....	200
Literature .....	600
Biography .....	500
History .....	650
Travels .....	500
Fiction .....	1,000
Total .....	5,000

In libraries of 10,000, 20,000, or 50,000 volumes, respectively, the proportions would differ.

If means are small, expensive works should not be bought when there are good cheaper ones covering the same field. A library with an income of only \$100 a year for books can not afford to spend \$75 upon the Century Dictionary; neither would it buy Nicolay and Hay's Life of Lincoln. The greatest good of the greatest number demands that the money be spent for an assortment of books of more moderate cost and upon a variety of subjects. This rule holds good for all libraries, for none are so situated that they can buy everything. It is doubtful if the taxpayers' money should be expended on such little-used luxuries as first editions of Shakspeare or of the Columbus letter.

Popular circulating libraries should prefer good editions in one volume to those in two or more volumes. Many readers never get beyond the first volume.

It is economy to buy good editions, not necessarily the most expensive, but those well edited, well printed on good paper, in good-sized type, are as desirable for public as for private libraries. The form of the book is an education in itself, and experience shows that good books, well bound, are better cared for than poor ones, even by the uneducated reader.

Reference books and those on science and useful arts should always be in the latest editions. Earlier editions have their historical value, but should be left to the special libraries. Books on zoology, geology, and botany should be by American in preference to foreign authors, unless the subject is treated from a general standpoint or the author is a leader in thought.

It is often a question how far the moderate-sized public library should buy special books. In general it may be said, "Do not buy the tools for trades." Draw the line between the science of law and law as a trade. It must also be remembered that the professions are more independent of the public library than the trades. Buy books for the mechanic rather than for the capitalist. The following specialties should generally be avoided: School text-books, sectarian books, partisan political books, works in foreign and classical languages (this depends on local conditions, however), early English literature of only limited interest, technical treatises on law, medicine, and theology, genealogies (except of local families), and antiquated books, such as old histories, chemistries, etc.

Col. T. W. Higginson's "Plan for the selection of books," a report prepared for the trustees of the Cambridge public library, is a careful study of the principles which should guide a library in choosing books. In connection with this should be read Mr. Griswold's criticism and Colonel Higginson's reply. (*L. j.* 15: 110-111.)

Miss Coe's paper, "Should American literature be specially favored in our libraries?" (*L. j.* 15: 101-104) is a strong plea for a full representation of American books.

After the general policy of the library has been determined, what is the best method of compiling the purchase lists?

Catalogs of other libraries of the same general character and of good standing are among the best guides, remembering, however, that every library accumulates more or less undesirable books through errors in purchases or indiscriminate acceptance of gifts. Also, that all catalogs soon become antiquated, as good books are continually being replaced by later and better ones.

Several lists of best books have been published, the most prominent of which is Sonnenschein's, though the extent of this list (50,000 volumes) makes it hardly a "select" list, and it is deficient in American books and editions. The "Catalog of the A. L. A. library at the World's Columbian Exposition" will form a good basis for buying, as it is endorsed by leading American librarians. Special bibliographies are

always useful, particularly such as are annotated. For such bibliographies consult the List of Bibliographical Works in the Reading Room of the British Museum, Handbook for Readers in the Boston Public Library, and Indexes to Recent Reference Lists issued by the Harvard College Library; also, Growoll's Bookseller's Library.

These catalogs and bibliographies are only available in buying the books of the past. For current literature other sources must be consulted. The Publisher's Weekly (N. Y.) contains the fullest lists of books published in the United States or imported in editions, and the notes are often useful, though not critical. Lists of English books may be found in the Bookseller (London).

In many Sunday-school libraries all books are carefully read by the committee before buying, but for public libraries this is impracticable. Reviews in the leading periodicals, such as the Nation, Critic, Literary World, and Bookbuyer, supplemented for English books by the Athenæum, Academy, and Saturday Review, are useful in making selections. Special publications are best for many classes of books, such as Science and Nature for scientific publications; engineering periodicals for books on mechanical subjects; the Electrical Review and Electrical World for books on electricity, etc. But various reasons prevent placing full confidence in reviews. This has been pointed out by Mr. George Iles in his paper, "The evaluation of literature" (*L. j.* 17: c 18), and he proposes a system of cooperative reviewing, in which the reviews shall be impartial and written with due regard to public library needs.

The difficulty of selecting fiction, mainly because novels are so often judged from the literary rather than the moral standpoint, has lead to several suggestions for publishing annotated lists of new books specially for library use. Such lists were given in earlier volumes of the Library Journal, but were discontinued. The Massachusetts Library Club has recently considered the subject, but has been obliged to defer the plan for the present.

**Buying duplicates.**—A question asked by the A. L. A. committee is, How much do you duplicate popular books? The answer can not be satisfactorily tabulated, but the following appears to be a fair statement of American practice. Reference libraries seldom duplicate unless divided into separate departments, in which case extra copies of certain books may be necessary. College libraries often require several copies of books used by classes. The subscription libraries, such as the New York Mercantile, buy freely of new books in demand (*L. j.* 14: 371). The best managed public libraries, if funds allow, buy many extra copies of the best books, but avoid much duplicating of ephemeral books. Demand for the latter soon dies out and leaves the extra copies unused.

It is better to buy 10 extra copies of a wholesome book wanted by the public than one copy of 10 other books which will not be read.



**Specialization.**—Lack of funds and the principle of adaptation to constituency has led librarians to consider specializing. While it is a great waste to duplicate expensive works or long sets in different libraries in the same city, it is yet a great convenience to students to find all the resources of a city on a given subject in one library. An arrangement between different libraries by which each shall mark out its special field is very desirable. Every place should have one complete local collection. This should be in the public library, unless there is a historical society which covers the same field. This specialization should not prevent each library having as many of the more popular books as it needs, as they must be brought close to the readers who will not go elsewhere for them. A list of the special collections in American libraries, prepared by Messrs. Lane and Bolton, has been published by Harvard University library (Bib. contrib. No. 45).

Out of 181 answers to the A. L. A. committee's question, 54 libraries reported no special collections; 49, local collections; 7, general American history, while the others each reported one or more special collections.

**Buying.**—Buying should be in the hands of one person, preferably the librarian. Methods depend on the character of the books, whether new and standard works regularly in the market or those that are old and scarce.

New books should generally be bought of one house, unless the library is a large buyer, when it may be better to divide the trade between several dealers, if they carry different lines in stock. If one bookseller has all the trade he will take special interest in seeing that the library gets what it wants, though the knowledge that the trade is divided sometimes acts as a spur to promptness in filling orders.

A large part of the new English books are at once reprinted in the United States, or else are imported in editions by branch houses or agents. These can be bought on the same terms as American books. Other English books are generally imported by libraries on duty-free certificates at a saving of about 25 per cent. Instead of employing foreign agents, it is now generally considered better to order through the regular American agent, or else through a firm that makes a specialty of importing. The cost, after adding consul's fees, insurance, etc., is about the same, while the librarian is saved annoyance of custom-house entries, and it is in every way easier to deal with an American agent.

Booksellers are generally glad to send new books on approval, but as freight both ways must be paid by the customer this is expensive to libraries at a distance. Because of the expense of carriage, also, small country libraries are obliged to buy less frequently. If practicable, the book committee should meet at least twice a month, unless the librarian has authority to buy between meetings.

New books should be bought as soon as published, for two reasons:

1. To keep the library up to date and satisfy reasonable expectations of readers; and

2. Because many books are soon out of the market and can only be procured at extra price, or with extra delay, specially if published abroad.

English books can often be had cheaper a few months after publication, either as "remainders" or from the great circulating libraries. The saving on the latter, however, is often more apparent than real, as they soon need rebinding. Many expensive English books are soon republished in cheaper editions. Only experience will guide when to buy at once and when to wait for cheaper editions or secondhand copies.

It is seldom wise to attempt to deal directly with publishers, even if they make slightly better terms, as extra express on small parcels soon eats up extra discounts. Only part of the books bought being published by the larger houses, it will always be necessary to buy a large proportion of the retail bookseller, and it is not well to deprive him of the advantage of buying in large quantities and compel him to supply only books on which there is small profit. He will be almost sure to recoup himself in some way. The same principle holds good with regard to the exceptionally large discounts offered by some dealers. These can only apply to what the trade calls "regular books," and if extra discounts are made on these, extra prices are generally charged for the "special books." In buying books, as well as other merchandise, it is best to select such firms as have a reputation for honest dealing and pay them a price that will give a living profit.

Of course a library distant from book centers must expect to pay local dealers somewhat higher prices, but so far as possible the local bookseller—under this term is not included those dealers who usurp the name of bookseller while their stock is mainly stationery, wall paper, and fancy goods—should be encouraged, as the bookstore and the library help each other. A well-stocked bookstore, kept by an intelligent bookseller, is an intellectual gain to any community, and in a different way it does the same kind of work as the public library. It is a great pity that the present condition of the trade has driven out many of the more intelligent dealers.

Certain books, including most so-called "subscription books," are seldom found in bookstores till some time after publication. While most "subscription books" are unworthy a place in the library, yet many desirable and indispensable works have been so published. Some librarians refuse to buy of traveling agents, but if a book is wanted immediately it is often best to get it through the channel chosen by its publisher. Publishers seem to have learned that it is for their advantage to employ a better class of canvassers, for the blusterer, determined to force his book on the buyer by any means, fair or foul, is mostly one of the past, or at least seldom enters the library.

Many of the smaller libraries buy only new books, but the larger libraries, and those buying in special lines, need many books that are out of print, even if not scarce. These generally can not be bought as



wanted, but must be patiently sought. The principal sources are secondhand bookstores and auction rooms, personal search in second-hand stores being most effective. The books can then be examined, and the secondhand bookseller is generally as ready as the dealer in new books to send his goods on approval. Make the bookseller your confidant if wanting out-of-the-way books, specially if on a given subject. You may in some cases have to pay more, but you will secure books otherwise overlooked. The following extract from Mr. Growoll's Bookseller's Library is as true for book buyers as for booksellers:

Then there is the well-read customer [or bookseller], who on occasions may be induced to give a hint or information concerning old or new books not easily got in any other way. \* \* \* Take such men into your confidence; their assistance will often save you hours of study.

Many secondhand dealers issue partial catalogs. These should be carefully examined for books that are on the "short" list or that may be wanted. It is hardly necessary to warn buyers to see that the books are perfect and of the best edition. Titles are often twisted in order to present them in the most attractive way. A leading New York secondhand bookseller used to say that the secret of cataloging is to enter the same book in half a dozen different places in the same catalog in such a manner that the reader shall never discover it.

The same caution holds in auction buying, and in no case should books be bought at auction except after personal inspection before sale. If the librarian can not be present, a secondhand bookseller will act as agent for a moderate commission. Whether buying in person or through an agent, a limit should be fixed for each item before the sale. Otherwise one may be carried away by his enthusiasm when the bidding is lively. If an honest, well-informed agent is employed much may be left to his discretion.

Scarce books may often be secured by advertising in book trade and literary periodicals. Some libraries publish lists of wants with their annual reports, specially of volumes needed to complete sets of periodicals and transactions of societies. This often secures a gift of the missing parts. If making special collections, acquaintance with other collectors in the same line may often lead to advantageous exchanges of duplicates.

Every librarian is recommended to study carefully Growoll's Bookseller's Library. Familiarity with its contents will enable the librarian to meet the bookseller on more equal terms to their mutual advantage. It would also be well for librarians to have some practical experience in retail bookstores and for booksellers to be informed as to library methods and systematic bibliography.

The following facts were brought out by the inquiries made by the library school for the A. L. A. comparative exhibit. Of 155 libraries answering the question, "What per cent do you buy at auction?" 106 reply "none," 27 "few," 15 buy from 1 to 5 per cent, and 7 from 6 to 30 per



cent. The question, "What per cent from secondhand catalogs?" was answered by 149; 57 say "none," 37 "few," 40 not over 10 per cent, and 14 from 10 to 50 per cent; 1 says "large." As might be expected, the smaller public libraries buy few or no books by either of these methods. On the other hand, the larger and more specialized libraries must secure much of their accessions either through auction or secondhand catalogs.

**Order system.**—When purchases are small no special order system is required, except to keep a copy of orders sent and check off items when received so as to make sure that all orders are filled and none duplicated. The larger libraries, however, find it necessary to adopt some well-planned system of keeping track of orders. That of the Harvard University library may serve as a sample and is here described.

The basis of this system is the order slip, which starts with the professor or other person recommending, and whose final destination is the official card catalog:

Book number .....	Author or editor .....
Ordered .....	Title .....
Received .....	.....
Fund .....	.....
<hr/>	
HARVARD COLLEGE LIBRARY ORDER SLIP.	Edition.....Place.....Publisher .....
* * * Do not write in the corner above.	Date.....Vols.....Size.....Price.....
Remarks may be made on the back of this card.	Sign your name ..... [If there is urgent need, write <i>haste</i> here.] and the date .....

The following is the history of such a slip: When received it is dated and an assistant verifies and completes details of title, edition, publisher, etc., and sees if the book is already in the library or ordered. This assistant checks the slip, which then goes to the librarian for approval. If approved it is stamped; if not, the person recommending is notified, if he is a person entitled (except by courtesy) to hand in titles for buying. The slip then passes to an assistant who orders the book on a regular form containing printed instructions to the agent. The library has agents in London, Paris, Leipzig, Florence, Copenhagen, Madrid, and several in this country. The slip is then stamped with date and name of agent, and the number of the order is written on it. A press copy of the order is then taken, after which it is signed by the librarian. A memorandum of estimated cost is then entered under the allotment from the book fund from which it is to be paid. As experience shows that a large proportion of the orders can not be immediately filled, it is generally safe to exceed by 25 per cent the appropriation for any given year. The order slip is then filed.

When a shipment is unpacked the books are laid on a counter in order of invoice, which is checked. Order slips are then picked out by invoice, invoices being arranged by the agent according to order

numbers. Date of reception is stamped on slip, also in copy book against the order. The slip is placed in the book and the librarian looks over the books and assigns each to its book fund, which is written on the invoice against each item. The books are then collated and the person recommending notified. If he wishes the book at once, a pink slip of paper is placed in the book and it is pushed through in a hurry, otherwise it takes the usual course. Name of library and date of reception are stamped on back of title-page and fund written below, book-plate, date slip for charging, and back label are pasted, and the book is entered on shelf list<sup>1</sup> and then goes to cataloger. The order slip is left in the book and as cards are written, it is corrected and fund and shelf mark are filled in. After cards are revised the order slip is filed in the official catalog.

To keep track of books in the hands of the catalogers and prevent ordering books already received, a temporary slip for each book received is written (much abbreviated) and kept in a box till books have gone to shelf and cards into catalogs. Each slip has a number stamped at the top and a smaller slip with the same number on it is placed in the book with the author's last name or first word of title written on it. When book goes to shelf this slip is taken out. When a number of such slips have accumulated they are used to pick out the corresponding slips from the box. An inspection of the number shows how many books have been received for cataloging in any given time.

During the checking of the invoice, reports on books not sent are indorsed on the order slip, also particulars as to partially filled orders, after which the slip is returned to the order drawer. A "continuation catalog," partly on cards and partly in a book, is used for keeping track of serials.

In a small library all the processes of the above order system are not necessary, but it forms a good outline for adoption whenever the number of orders is larger.

**Disposal of duplicates.**—Nearly every library accumulates duplicates, mostly through gifts. While many of these have little apparent value, yet it must be remembered that every book has its proper place awaiting it. An old edition of a schoolbook is useless in the circulating department of a public library, but may be indispensable to the American Antiquarian Society or the Essex Institute. The odd report of a society may be just what is needed by another library to complete its file.

The question is how to bring a return to the library by placing these duplicates where they will do most good. Some libraries use the auc-

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<sup>1</sup>The Harvard College library is almost alone in keeping no regular accession book, though it does keep a book recording daily the volumes and pamphlets received from each source. It enters on the shelf list instead of the accession book many of the particulars of imprint, source, etc. This routine could readily be adapted to the usual accession book. (See later under Accession book the reasons against omitting its use.)



tion room, but the attendant expense renders this undesirable unless for books of considerable value. The same holds true with regard to selling through a bookseller on commission.

A central clearing house for duplicates has been suggested, but here also the expense of handling must be considered. It is doubtful if there would be sufficient business to reduce the pro rata cost to contributing libraries to a moderate figure, and the State or National Government has hardly reached the point of undertaking this work at the expense of taxpayers.<sup>1</sup> Dr. Ames's exchange of public documents might be cited against this view, but in this case the work is confined to the publications of the National Government which are published for free distribution.

For these reasons, libraries will generally have to depend, in the near future as in the past, on private arrangements, either for cash sales or for exchanges with other libraries or collectors.

A few years since, the Columbia College library inaugurated a system of briefly cataloging duplicates on slips which were arranged by subjects. If another library desired books on a given subject, the slips for this subject were mailed. The order could be given by simply separating the slips of books desired. The list of special collections in American libraries will be useful in finding possible customers for many odd books.

**Gifts.**—Diligent advertising and begging will generally secure many gifts, ranging from whole libraries to the refuse of the garret. Even the latter may contain long-desired books or missing periodicals. It is not necessary that all gifts be added to the library, and they should be received with the understanding that they may be sold or exchanged if duplicates or unsuitable. It costs money to catalog and store books, and those outside the library's field should be rigidly excluded. Individuals interested in particular subjects may often be induced to contribute either books or money to build up some special department. It is undesirable that gifts of miscellaneous books should be shelved by themselves. They should be distributed through the library with their respective subjects. All gifts should be acknowledged at the time, as well as in the annual report.

**Collation.**—Librarians differ widely as to this. Some collate everything, others only the more expensive works and those containing plates, while still other experienced librarians collate nothing. The argument urged against collation is that it costs more than the occasional loss of an imperfect book. It is true that most publishers are

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<sup>1</sup>Since writing the above we learn that the New York State library will soon open its clearing house for duplicates. Books when received are appraised and the library is entitled to draw out an equal amount from the stock on hand at prices at which they were received. This is free for New York libraries only, and the cost of handling is borne by the State because of the great practical value to all its libraries. It is proposed to allow libraries outside New York to share the advantages on payment of the actual cost of the State's service, no allowance being made for profit.



willing to replace imperfect books years later if possible, but experience shows that imperfections, even if noticed by the reader, are often not reported till after many years, when the book may be out of print. The safer rule is to collate all purchases, but a show of hands at the Chicago conference indicated the general opinion that it is desirable to collate only expensive works.

**Accession book.**—The accession book is the business record of the library and is the first place where books should be entered. It should be accurately kept, so that it may be sworn to in court as a true statement of the contents of the library at any given time. The form of this book was one of the first subjects considered by the A. L. A. cooperation committee, and their deliberations, resulted in the "A. L. A. standard accession book," now made by the Library Bureau.

The facts given in this book are as follows:

Date of accession.	
Accession number [consecutive].	
Class number.	} These form the call number.
Book number.	
Volume.	
Author.	
Title.	
Place and publisher.	
Date.	
Pages.	
Size.	
Binding.	
Source. [Fund, and of whom bought, or giver.]	
Cost.	
Remarks. [Condition, rebinding, withdrawal.]	

An introduction contains rules for entering and a list of library abbreviations. Each volume has a separate line and bears its own accession number. If it is worn out or lost it is marked "withdrawn," which ends its history. The copy replacing is given a new number.

Many libraries, considering the size of the "Standard" (35 by 30 cm.) too cumbersome and costly, adopt the "Condensed accession book" (25 by 20 cm.), which contains the same items but allows less space for entry.

In the Library Journal, v. 3 (see bibliography), will be found a discussion on the accession book, Mr. Winsor claiming that it is unnecessary and that the business entries might better be included in the shelf list. No other librarian came forward in support of his arguments, and it may be considered that the question has been definitely settled, and in favor of the A. L. A. standard.

As the Harvard College shelf list, including accession entries, has never been shown in print, it is given below, not for commendation, but simply as a matter of record:

## HARVARD COLLEGE LIBRARY SHELF LIST.

H. C. L.

Class ———.

Book no.	No. vols.	Author.	Title.	Place.	Date.

Branch ———.

Section ———.

Size.	Date of accession.	Source.	Remarks.

Runs across two pages, 32 lines on a page. Title, not volume, to a line. Cost and accession number not given.

**Withdrawal book.**—This is a useful supplement to the accession book. It was invented by J. C. Houghton, of the Lynn public library, and is not yet in general use. A slightly modified form used by the Salem public library is as follows:

[Left-hand page.]

Date.	Acc. no.	Call no.	Author.	Title.
Mar. 10 Apr. 3 3 cm.	3985 13593 2.5 cm.	917.2-BL F-1227E. 4 cm.	Biart, L. .... Hawthorne, N. .... 5 cm.	Adv. of Young Naturalist. True Stories. 11.5 cm.

[Right-hand page.]

Cause.	Remarks.	Date replaced.	Acc. no.	Call no.	Remarks.
Damaged ..... Worn out ..... 2 cm.	Pd. for by M. C. Smith. .... 7.5 cm.	Mar. 16 2.5 cm.	26845 2.5 cm.	917.2-BL. 4.5 cm.	4 copies left. 7 cm.

The width of each column is given in centimeters. The size of the condensed accession book is well adapted for this.

The principal use of the withdrawal book is to give a fuller record than can be made in the accession book of the circumstances attending the withdrawal of a book. When this book is kept the only entry in the accession book is the date of withdrawal. Another use is for statistics. The year's additions in each class can be ascertained from the accession book, the withdrawals from the withdrawal book, the differ-

ence is the net growth in each class. This appears to be the simplest and most accurate method of keeping these statistics.

**Marks of ownership.**—As a mark of ownership the name of the library should always be stamped on title-pages and all maps and plates not containing letterpress. Also, as the title-page is often lost, some other fixed page should be stamped.

An embossing stamp is best for this purpose, as, if it is properly made, it is impossible to remove completely the impression. A rubber stamp is sometimes used, but this may offset if the book is closed before dry, and it may be easily erased by scratcher or emery paper.

A bookplate should be pasted inside the front cover. Besides the name and address of the library, this should state the source from which the book was received, if a gift or bought from a special fund; also the shelf mark. Many libraries give date of receipt, but this is superfluous if the accession number is written or stamped in the book. The plate should not be too large, should be legible, with clear spaces in which to write the numbers, so that these may not be confused with the printing or engraving, and should always give the name of the State as well as of the city or town.

For convenience, the pocket or date slip described under loan systems should be pasted in at the same time.

We have now considered the various processes involved in adding a book to the library from its recommendation to its entry in the accession book. Its future history, including its shelf location, cataloging, and use by readers, belong to other chapters.

#### BIBLIOGRAPHY.

The following bibliography is subdivided in the same manner as the body of the paper, and under each heading the references are arranged chronologically:

##### SELECTION OF BOOKS.

POOLE, W: F. Selection of books (In "Organization and management of public libraries.") United States Bureau of Education. Public libraries. (1876) p. 479-481.

HARRISON, R. Selection and acquisition of books for a library. *L.j.* (1877). 2: 145-150.

National libraries should contain everything. Smaller libraries to be guided by "utility" and "appropriateness." Best selector is librarian working in harmony with a competent book committee. Gifts often unsatisfactory.

ANDERSON, J. M. Selection and selectors of books. *L.j.* (1877) 2: 150-52.

Covers same ground as Mr. Harrison.

HOMES, H: A. Selection of books for popular libraries. *L.j.* (1878) 3: 50-51.

Recommends publication of approved lists of new books in *L.j.*

JAMES, H. P. Selection of books for the Newton free library. *L.j.* (1884) 9: 209-10.

A reply to criticism for buying too little fiction. Editorial on same subject, *L.j.* 9: 207-8.

LITTLE, G: T. What should be done for an old library with a limited income. *L.j.* (1885) 10: 245-46.

If your library is behind the times in its books, buy back volumes of leading periodicals.



NELSON, C: A. Choosing and buying books. *L. j.* (1887) 12: 155-56.

Buy reference books freely.

How we choose and buy new books: [a symposium.] *L. j.* (1889) 14: 336-39, 372.

A valuable statement of methods of ten leading libraries contributed by their librarians.

COE, E. M. Should American literature be specially favored in our libraries? *L. j.* (1890) 15: 101-04.

Answers. "Yes." Cites experience of N. Y. free circulating library. The most popular works are usually those of American authorship, specially among readers of foreign descent. Discussion, p. 116-117.

HIGGINSON, T: W. Cambridge public library. Plan for the selection of books. (1890.)

A careful study of the principles which should guide the book committee.

GRISWOLD, W: M. Choice of books in public libraries, especially at Cambridge. *L. j.* (1890) 15: 110.

HIGGINSON, T: W. The Cambridge public library and its critic. *L. j.* (1890) 15: 110-11.

FOSTER, W: E. Industrial additions to the Providence public library. *L. j.* (1890) 15: 144.

Lists of proposed additions sent to specialists for criticism.

NELSON, C: A. How the books were bought for our library. *L. j.* (1890) 15: C 38-39.

GREEN, S: S. Relation of the librarian to the book committee. *L. j.* (1890) 15: C 116-17.

ILES, G: Book reviewing systematized. *L. j.* (1891) 16: 208.

A cooperative system outlined.

Selection and buying of books. [Mass. Lib. Club discussion.] *L. j.* (1892) 17: 172.

Report of committee on preparation of lists for purchase. [Mass. Lib. Club.] *L. j.* (1892) 17: 429.

The plan proposes a committee similar to the ladies' commission on Sunday school books. Books to be supplied by Library Bureau in connection with their plan of printed catalog cards.

ILES, G: Evaluation of literature. *L. j.* (1892) 17: C 18-22.

An enlargement of his paper cited above. Discussion at pp. 63-65, 80, 81.

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## PAMPHLETS.

By WALTER S. BISCOE, Catalog Librarian, New York State Library.

**Definition.**—Before treating of pamphlets we must know what they are. It is very common to set an arbitrary standard of a certain number of pages and to call all unbound works below this standard pamphlets. About half the librarians at the Chicago meeting limited the term pamphlets to unbound works of less than 100 pages. The Century Dictionary gives the following definition:

A printed work consisting of a few sheets of paper stitched together, but not bound; now, in a restricted technical sense, 8 or more pages of printed matter (not exceeding 5 sheets) stitched or sewed, with or without a thin wrapper or cover.

J. Winter Jones, librarian of the British Museum, in his inaugural address at the meeting of the London conference of 1877, said:

A distinction ought to be drawn between a volume, a pamphlet, a single sheet, and a broadside; or rather one general agreement ought to be arrived at upon this branch of our subject. It may be urged, and with much reason, that every work which is bound should be treated as a volume. A work of an ephemeral nature may be called a pamphlet, but such a work may extend to more than 100 pages. When is such a work to be raised to the dignity of a volume? It is assumed that the question of pamphlet or no pamphlet will be confined to works in prose. It would be the safest course to apply the term single sheet to a sheet of paper folded once, or printed on both sides without being folded, and the term broadside to a sheet printed only on one side.

Mr. Cutter has described them as "Those thin, limp books which we call pamphlets."

The real distinction, on which all agree, seems to be that a pamphlet is unbound; whatever its size, as soon as placed in durable covers it ceases to be a pamphlet and becomes a volume. Whether any limit of size should be made among unbound works is an open question. Clearness and accuracy will be gained by disregarding size and making binding the sole test. We would not say seriously that a library should collect unbound works of over 100 pages and throw away those containing less pages. Neither can we satisfactorily base our treatment of these works on the shelves on the number of pages. It might be taken as one criterion in cataloging, but it would be only another way of saying "catalog what is worth cataloging," and the rule would perhaps need to be broken almost as often as kept, for many pamphlets of under 100 pages are more worthy of cataloging than most of those of over 100 pages. The question is really as to the collection and treatment of the large mass of unbound printed material which, not being regarded as valuable enough to bind separately, is kept unbound for years, perhaps always.

The following definitions seem to accord in the main with common usage:

*Broadside*.—A sheet of paper printed on one side only; *e. g.*, hand-bills, Thanksgiving proclamations, etc.

*Sheet*.—A sheet of paper folded only once, or printed on both sides without being folded and without covers.

*Pamphlet*.—A printed work consisting of one or more sheets of paper fastened together, but not bound.

*Serial*.—A publication issued in successive parts, usually at regular intervals, and continued indefinitely.

*Sequent*.—Any publication issued in parts, including all serials, irregular publications and books, the volumes or parts of which are issued at different times. In a more restricted sense, excluding serials, a publication issued in parts, usually at irregular intervals and often with a definite termination.

**Statistics**.—In reporting the size of a library or the number of additions, volumes and pamphlets should be counted separately. This will give a fair basis for comparison of the size and value of different libraries. It is here, perhaps, that there is the strongest argument for reckoning an unbound work of over 100 pages as a volume, not as a pamphlet. At first thought it seems better to say this report of 75,647 volumes means substantial works, whether bound or unbound; but this would not be true unless you excluded from the count all bound volumes of less than 100 pages, and I believe I have never heard a librarian propose to do this. By using binding as the distinctive mark of a volume, the statistics say this library contains so many works which are bound and so many which the authorities think, taking all things into account, it is best to leave, at least for the present, unbound. From the count of pamphlets should be excluded all the numbers of current periodicals and proceedings of learned societies, and all parts of works issued in paper covers, but intended to be bound as soon as completed. This practically excludes all sequents except annual reports, catalogs, etc. These should be counted as pamphlets. There is also a wide divergence of opinion as to what statistical record should be made of bound volumes of pamphlets. Current report says that the British Museum counts as one volume 10 pamphlets bound together, while the Bibliothèque Nationale, at Paris, counts every pamphlet, bound or unbound, as a separate volume. If this is so, no just comparison of the size of these two great libraries can be made. In an accession book any number of pamphlets bound together are usually given a single accession number. It seems natural in statistics to follow the same rule, and to report the number of volumes the same as if they were counted as they stood on the shelves, without taking them down to examine their contents, and to report a similar count of pamphlets. If greater accuracy is desired, or if it is wished to show how large a pamphlet collection the library has made, it can be best done by giving these facts as additional in-



formation; e. g., 151,643 volumes (including 4,576 volumes, containing 53,974 pamphlets) and 79,627 unbound pamphlets. Uniform usage in giving these statistics would be of great service to all persons engaged in the comparative study of libraries.

**Importance.**—The desirability of preserving the larger part of pamphlet literature is granted by most librarians. Everyone will insist on the preservation of such as relate to the subjects in which he is interested. Grant this, and all must be kept, for some one is interested in every subject. The importance of pamphlets is attested by the famous collections like the Thomason pamphlets in the British Museum, by the special catalogs of pamphlets issued by booksellers, by the sumptuous binding frequently given to the once despised pamphlet, and by the extravagant prices for which they are often sold after a century's existence. Special classes of publications sought for by enthusiastic collectors, such as early Americana, accounts of criminal trials, minor publications of noted authors, etc., bring large prices. It is true that the great mass of pamphlets can lay no such claim to a large money value, but are of seemingly ephemeral interest. Are they really of little importance? Reports of philanthropic work, of historical societies, of governmental departments—national, State, and municipal—of religious bodies, propagandist pamphlets of all kinds, scientific monographs, university theses, anniversary addresses—these and a host of others preserve information vainly sought elsewhere. They contain the material which will be wanted 100 years hence for writing the history of the movements of to-day. It is well to insist strongly on their preservation somewhere, for there is more danger of their being despised than of their being overrated. It is the common everyday pamphlet which needs specially to be cared for, since that is the very one usually disregarded. The university extension syllabus, which is in everyone's hand, the report of some local society or club, the manual of a church, or the report of a town officer—these are everywhere, and often no one thinks to lay aside a copy for preservation.

**Large depositories.**—What libraries ought to make large collections of these pamphlets, to gather all the material they can and store it for the use of future generations? Certainly not every one, for, done in the least expensive way, it costs much money and labor and needs much space. The library must have a large income to pay the expenses, and a large staff to do the work. Then libraries should be scattered all about the country, for the double purpose of gathering more fully the pamphlet literature of each section of the country and to provide depositories which shall be easy of access to all investigators. There are not enough libraries at present doing this work. Perhaps all those whose means justify them in undertaking it are doing what they can; but if so, it is only one more reason for providing more ample funds for building up great libraries, to be both storehouses and literary workshops. An analysis of the statistics collected for the comparative



exhibit at Chicago shows only 42 libraries collecting annually over 500 pamphlets, and only 12 which add over 2,000 per year. These figures are, of course, not complete, but with previous statistics they show that there are far too few libraries persistently collecting this ephemeral literature; the number does not seem to be over 20, and three-quarters of these are in the extreme East, i. e., New England and Middle States, including the District of Columbia. The great national library at Washington should, of course, stand at the head here, as in everything, collecting from both American and foreign sources. Then, in nearly every State there should be a large scholarly collection, aiming to collect the literature of that part of the country specially, but gathering in whatever it can get, receiving contributions from all the individual collectors and providing a place where everyone may be sure that his hobby will be gladly received and cared for; a place, too, where everyone will come with the expectation of finding material for his intellectual work, and where he will not be disappointed.

**Select collections.**—What pamphlets should other libraries keep? Every library should have some specialty, and should have as good a collection on this subject as can be obtained. Many libraries will have more than one such subject. At least one library in every place should keep all local history and literature, trivial as well as important; local newspapers, sermons, addresses, and reports, school catalogs, catalogs of manufacturers or dealers, lists of church members or of any local society—whatever you would like to see if printed 50 or 100 years ago, collect now and keep for the people of 50 or 100 years to come. Each college, school, and seminary should gather all that will preserve the history of the institution; yet often they have no complete sets of their own official publications, and the student periodicals and ephemera are very frequently passed by as too trivial. Theological seminaries will collect the literature of their denomination; societies—musical, artistic, literary, historical, or scientific—each have their special line plainly marked out. Accident often determines the field of collection. Some enthusiastic collector after gathering material for a lifetime bestows it on the local library; a local society engages in scholarly research or some line of investigation; a native of the town has become a noted author, and works by him and about him are carefully collected; perhaps he has been prominent in some event of national importance, and whatever relates to this event is sought for and added to the library. Other pamphlets, outside the specialties of the library, which it does not wish to preserve, are best sent to the nearest large library willing to care for them.

**Methods of collecting.**—The same means, in great measure, will be used by the small and by the large library; differing circumstances will make sometimes one and sometimes another method best. All libraries will use personal appeal as the most direct and efficacious method, which can be supplied by no other. It need not be direct and

outspoken begging, though this is sometimes desirable. A personal statement of the purposes and needs of the library, what it is trying to do, and the literature it wishes to collect, made perhaps in ordinary conversation, will often produce far-reaching results. Requests for individual pamphlets, gentle hints that the library should not be forgotten in the distribution of this or that treatise, and inquiries where the library can obtain a duplicate of a desired pamphlet, not only serve to get the individual object asked for, but show that the library is interested in that line and anxious to get all available material.

Written requests will be used most by small libraries. Their efforts are not so extensive as to preclude writing; with small funds they can less easily bear the expense of printed forms, and usually the librarian has more leisure. Even in a large library the written request will sometimes be needed, for it commands attention when a printed blank is disregarded. Correspondence with specialists, with requests for their own publications and for their assistance in gathering other material, should not be overlooked. You may thus hear of and often acquire many pamphlets which would otherwise be unknown to you.

Printed begging blanks will be extensively used by the large library which is collecting widely. They *must* be used to diminish the labor and expense of correspondence. To offset the disadvantage of print they are fuller than a written request could be, yet they must not be too long or no one will read them. A brief outline of the purposes and facilities of the library and the reasons why such pamphlets are desired are sufficient. Special blanks for special subjects are very desirable, as in this way more minute information can be given and the exact purpose of the collection stated.

Printed announcements should be placed in the publications of the library; and on the covers of catalogs, bulletins, and reports both general and special requests may be made. A list of the special collections which the library has will often be of great service. A standing offer to send for or to pay express on packages of pamphlets, offers to exchange with other libraries or with private collectors, statements of the reasons why collections on certain subjects will be specially valuable to the constituency of the library, lists of pamphlets needed to complete certain files, announcements of gifts already received, these and many other methods serve to bring the matter to the attention of all who receive the publications of the library, and with no additional expense secure abundant returns.

*Printed catalogs.*—When the library can afford it, wide distribution of special catalogs on each subject is of the greatest service. It gives the library a reputation among all interested in those subjects. It puts into visible form the results of the work already expended, and makes a much deeper impression than a mere statement of the plan or of the numbers already accumulated. It shows gaps in the collection, and even without a plea for gifts vacant places call aloud for missing



numbers, and many times pamphlets, of whose very existence you were unaware, are sent to you in answer to this unspoken plea. Sometimes it is desirable to make this catalog a complete bibliography of the subject, with call numbers against works already possessed, and a request for all others.

*Newspaper notices.*—The local papers are usually glad to help make known what has been done and what is proposed. Sometimes a long account of the collection, enumerating varieties, describing the curiosities, mentioning the most important items for the investigator, and detailing the most needed desiderata, will be gladly printed. Often a brief note with requests for the help of all interested is best. At moderate intervals afterwards additional information might be given showing the progress made and reviving the subject in the public mind.

*Acknowledgments.*—Whatever other methods you have used, a thorough system of recording and acknowledging gifts, and a careful record of all sequents, and prompt requests for any missing number, is an essential to success. You must show that you appreciate what others do for you. A prompt acknowledgment of one favor is the very best request for a repetition. The supplies of the less prominent sequents is very soon exhausted, and it is necessary that any gaps in annual reports and more frequent publications should be noted speedily and requests for missing numbers sent. What can be obtained easily at the time for nothing it may be impossible to buy a year later.

Make the material you have already accumulated so useful that your library will be recognized as a good place to send similar pamphlets. Exchange duplicate pamphlets with other libraries, especially those at a distance, from whom you may naturally expect to obtain the pamphlets of their immediate locality. Sometimes an exchange can be made directly, by groups, without the cost of making a list, by offering 100 or 500 pamphlets on your locality or specialty for a similar collection, e. g., "I will send you 500 New York pamphlets in exchange for 500 California pamphlets." Large libraries should, by special arrangements with smaller libraries about them, be the great depositories, and should lend from their large collections to their smaller associates. The wealthy library should pay for arranging and caring for accumulations which the small library can not afford, and the material would be equally available for both. At the cost of postage it could be sent at any time to the small library, and ordinarily it would be kept in the large collection at the center of population, where it would be most frequently needed.

*Preservation.*—Most librarians agree that pamphlets should be finally bound into books, that there should be no permanent collection of pamphlets, which is only a halfway station on the road to completed volumes. If expense were no consideration a large proportion of pamphlets would be bound separately. The cost of this is so great that only the wealthiest libraries can afford it and cheaper methods must be found.



A few librarians advocate binding as fast as enough pamphlets are accumulated to make a volume, regardless of subject. They would depend entirely on the catalog to make the contents known. Any librarian who has a classified arrangement of his books soon rejects such a plan. He must have his pamphlets arranged like his books, and there are, indeed, stronger reasons for their minute classification. The question to be first decided is, shall they form a separate pamphlet collection or shall they be shelved with the books? The latter plan seems, on the whole, best, though the former has some advantages. The separate collection would usually be placed in a separate room, and would remove an element of unsightliness and disorder from the shelves; it would be more convenient for comparing new pamphlets with old, and for filing away recent acquisitions; it would allow the use of such special devices as pigeonholes, drawers (used by U. S. Naval Observatory), and various files and cases. This last is perhaps a doubtful advantage, for the devices are too costly for any except wealthy institutions. To shelve pamphlets on the regular shelves alongside the books seems most advantageous for the use of the library, both by readers and librarian, while it probably makes more work in administration. Resources on a single subject are brought more nearly together and the constant reference to two places is avoided.

Pamphlets will then be classed minutely by subjects exactly the same as books and will be placed on the same shelves. Till they are bound they will usually stand together either at the end or the beginning of a subject. They may be kept in bundles, boxes, pamphlet cases, or in binders. Bundles are the cheapest, a package tied with twine involving practically no expense, but it is very unsightly, gathers much dust, and unless a considerable number of pamphlets are put together can not stand alone, and is a vexation in taking out and putting back adjoining books. It may be improved by putting round it a cover of fairly stiff manila paper, and this may do for keeping incomplete volumes of periodicals while waiting to pick up missing numbers. The various binders, Emerson, Springback, Champion, Common Sense, etc., stand at the other extreme. They are neat, keep the pamphlets clean, and look like books; but they are expensive and in most cases will hold only a few pamphlets. The Common Sense, Emerson, and similar styles have the added objection of a permanent mutilation in the holes pierced through each pamphlet. For temporary storage on the shelves some form of pamphlet box or case seems most desirable. They can be had of any size and at reasonable prices. The sizes should fit the shelves of the library. The height of the ordinary octavo shelf is best for general use. This will contain all pamphlets up to nearly 25 cm. high. The case should not be too wide, otherwise a few thin pamphlets left in it will slip down and become twisted out of shape. The medium cost L. B. wooden cases are of varying thickness (3, 6, and 10 cm.) to meet this difficulty. For very thin pamphlets in a subject where not

many are received the thin manila C. C. pamphlet case is usually satisfactory. Manila cases may be obtained in quantity, made like the folding boxes used by confectioners, very cheaply, an octavo case 5 cm. thick for \$2 or \$3 a 100. But these are not strong enough to stand wear and soon become soiled and broken. Of more expensive cases the Clacher is perhaps best, a closed case excluding dust, with a table of contents inside the cover.

When enough pamphlets on a single subject have been gathered for a suitable volume they should be bound, shelved, and treated like any other book. Annual reports should be bound at regular intervals, then reports by decades, 1880-89, 1890-99, etc.; thicker reports by half decades, 1880-84, 1885-89, etc. Unbound reports of each institution, society, or officer should be kept in a box immediately after the bound volumes. More valuable pamphlets should be bound separately. A form of binding is coming into use which seems likely to settle the disposition of a great many pamphlets of medium size and value worth binding, but not worth an expenditure of 25 or 50 cents. A cheap cover is made with board sides and cloth back, having inside four muslin stubs on which four thin pamphlets can be pasted, or a muslin stub may be pasted on each side of thicker pamphlets. While this binding is not very substantial, it is strong enough for occasional use, inexpensive, and can be done quickly by cheap help without sending to a binder. The pamphlets can then be treated like regular books. Certain classes of pamphlets should then be bound alone, or very closely classed, e. g., genealogies, if there is a large collection, so that each family may stand in its alphabetic place; individual biographies where there is only a single life, or two or three thin pamphlets which can go into such a binder as that just described; local histories, regimental histories; in short, all pamphlets where it is desirable for each to stand on the shelves arranged by its special character and in sequence with similar books and pamphlets, and to have it possible to place beside it another pamphlet on exactly the same subject issued years afterwards.

**Cataloging.**—The ideal method is to catalog a pamphlet with the same accuracy and fullness as a book. A pamphlet is only a little book and often is worth more than many of the small, perhaps even of the large, volumes in the library. But if this little book is not important enough to bind, it is perhaps equally extravagant to spend time and money to catalog it. The sentiment at Chicago was strongly in favor of cataloging pamphlets. Yet if something must be left undone, this or a part of it seems to be possible without too great loss. Pamphlets closely classed on the shelves are in a certain limited sense their own catalog. You can find there what the library has on a certain subject, and when readers are admitted to the shelves there is less objection to this plan. Certain libraries add a reminder in the card catalog in the form of a printed or written card under the proper subject head calling attention to the uncataloged pamphlets in such a volume or box. For



the author catalog a separate catalog, not made as full or accurate as the regular catalog, may often serve a part of the purposes. It makes two places to consult and will often be overlooked, but from the librarian's side it may fulfill important uses and save in labor much more than its cost. Made on thin<sup>1</sup> slips by cheap assistants the cost of material and time is slight. New pamphlets can be comparatively quickly compared with the catalog and duplicates thrown out when otherwise each pamphlet must be carefully classed, then taken to the shelves and the collection of pamphlets on the subject looked over before knowing that it is or is not a duplicate. In large libraries the saving of time in going to remote shelves is an important consideration. In small libraries with few pamphlets it is probably best to catalog the same as books unless this hinders more important work. Often a loan desk assistant will have time, when calls are less frequent, for this and similar less valuable work. In all libraries of original research the value of pamphlets is increasingly felt and the importance of a catalog is strongly insisted on. It certainly should be done; but if pamphlets can be obtained and time to catalog them can not be found, then take the pamphlets and hope that the library will some time have money enough to do its work properly. It will be a stronger plea for more help to be able to say "the library already has material which ought to be made available" than to say "if more money is given to the library pamphlets can be gathered and much help given to readers from them."

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The following list includes all important articles or pamphlets in the *Library journal*:

- CUTTER, C: A. Preservation of pamphlets. *L. j.* (1876) 1: 51-54; discussion, p. 101-6.
- SWIFT, LINDSAY. Pamphlets and continuations of serials. *L. j.* (1887) 12: 350-54. Experience of Boston public library. Value of pamphlets, importance of cataloging, numbers cataloged, breaking up bound volumes, treatment of minor pamphlets, binding of serials, indexing.
- What we do with pamphlets. *L. j.* (1889) 14: 433-34, 470-71.
- Buffalo library. Classed and cataloged. Pamphlet boxes of paper board open at top.
- Boston Athenæum. Formerly kept in bound series according to size. New pamphlets classed and kept in boxes, or practically drawers, holding each about 100 pamphlets arranged like cards.
- Harvard College. Bound as fast as possible; cataloged when bound; unbound assorted and classed.
- New York Apprentices' library. Bound by broad subjects and then cataloged; would prefer to keep unbound in pamphlet cases.

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<sup>1</sup> If the slips used are uniform in size and preferably in thickness with the catalog cards used for books, whenever wished the two catalogs may be combined. The cost of the cards is very trifling compared with the labor. For a mere index for use in different rooms, or otherwise unlikely to be combined, the V slip, 5 by 7.5 cm., being only  $\frac{2}{3}$  catalog card size, admits of great economy of storage in drawers or trays and yet gives room for needed items.—M. D.



What we do with pamphlets—Continued.

Brooklyn library. Kept on special shelves alphabetically by subjects, tied in moderate sized packages with paper label; complete catalogs on slips, both author and subject; bind in separate volumes, half morocco, plain, whenever enough on any subject of interest to form a good sized volume.

New York Y. M. C. A. Bound in groups by subject. Bound volumes have book number P and then marked v. 2, v. 3., &c.; discusses general questions of preservation and style of binding.

Providence public library. Originally in one rigid alphabetic order; now placed in 6 groups; 1, government publications; 2, libraries; 3, colleges and schools; 4, other organizations; 5, biographic sketches; 6, other pamphlets; alphabetic in each group. Special collections like Harris on slavery kept separate. Uses Emerson binders for temporary issue; if demand is likely to be steady it is regularly bound.

New York Mercantile. As soon as enough pamphlets for volume are received they are bound regardless of subject, and volume given its number in sequence. Cataloged under author and subject.

HOMES, H: A. Unbound volumes on library shelves. *L. j.* (1886) 11: 214-15. Plan formerly used in N. Y. State library; cloth covers tied at front edge; grouped broadly by subjects.

HOLDEN, E: S. On the treatment of pamphlets in special libraries. *L. j.* (1880) 5: 166-67. U. S. Naval Observatory; classified and arranged in special chests of drawers.

MANN, B. P. The care of pamphlets. *L. j.* (1885) 10: 399-400. Reprinted from *Science*, 6: 407-8. Pamphlets punched with holes at standard distances apart placed between two separate covers, with a separate back of manila paper.

AUSTIN, WILLARD H. Pamphlets: What to do with them. *L. j.* (1893) 18: 143-44. Binding by subjects and indexing on Leyden slips.

## CATALOGING.

By WILLIAM C. LANE, Librarian Boston Athenæum.

There are several codes of rules for cataloging. That most generally followed is Charles A. Cutter's *Rules for a dictionary catalogue*, 2d edition, Washington, 1889, published by the United States Bureau of Education as the second part of a special report on public libraries, originally issued in 1876. This work discusses the principles of cataloging in a lucid and thorough manner and takes up a great variety of cases to which to apply them. It should be in the hands of every cataloger whether all the rules laid down are followed or not. It may be obtained by application to the Bureau of Education, Washington.

Another elaborate work is *Eclectic card catalog rules, based on Dziatzko's "Instruction" compared with the rules of the British Museum, Cutter, Dewey, Perkins, and other authorities*. By K. A. Linderfelt. Boston, C. A. Cutter. 1890. This is an adaptation of a German code by the librarian of the Breslau library. It is in some respects fuller than Cutter's rules and gives more examples, specially such as are drawn from foreign sources, but it treats only of author and title entries; subject entries are not considered at all. The author has compared all the cataloging systems with which he is acquainted and has noted their divergencies as well as their agreement on special points, so that his

work forms a compendium of the practices recommended by other authorities. It may be obtained of Mr. C. A. Cutter, Forbes library, Northampton, Mass., or of the Library Bureau, Boston.

*Condensed rules for cataloging* adopted by the American Library Association were printed in the Library journal, 3: 12-19, 1878, and may be found also in an appendix to Cutter's rules. The Library school at Albany has also its own code of rules; it was published in 1889, with many sample cards given, and may be obtained at the Library Bureau, Boston. It contains a *Bibliography of catalog rules* by M. S. Cutler, to which and to the introductory notes in Cutter and Linderfelt the reader is referred for further information.

In the Library journal for September, 1893, p. 79, is a report by a committee of the Library Association on the subject of catalog headings which lays down certain principles that seem to be gaining general acceptance now, though departing somewhat from the stricter forms of a dictionary catalog. (See section 20, on p. 847.) The same committee will soon publish a list of subject headings which is likely to be of considerable use to inexperienced catalogers and to all who wish to keep their work in line with what is being done elsewhere.

This paper does not undertake to discuss any of the principles of cataloging, a task already well done in the publications referred to above, or to decide any of the mooted points. It will attempt solely (1) to set forth briefly certain points in regard to a library catalog which may be now taken as settled, and (2) to mention certain other points upon which there is as yet no general consensus of opinion. In this second division the attempt is made to show what is the actual practice on each point of 58 leading libraries both large and small in different parts of the country. A list of these is given at the close of the paper. The statistical material for this paper is derived from the 191 answers to the circular sent out in 1893 by the committee on the A. L. A. exhibit at the World's Columbian Exposition, and from the answers returned by the 58 libraries referred to above in reply to a more detailed circular of my own sent out in November, 1894.

#### A. POINTS WHICH MAY BE CONSIDERED SETTLED.

##### 1 The necessity of a comprehensive and detailed card catalog.

If a carefully made and reasonably full printed catalog exists the card catalog may form simply a supplement to this, but if the printed catalog be only a finding-list or short-title catalog the card catalog should be complete in itself.

Its forms are various: in drawers, in trays open on a counter, in sliding trays, in a Rudolph indexer, or slips mounted on the leaves of a book. In any case the point to be provided for is the possibility of inserting new titles indefinitely in strict alphabetic or other specified order.

2 On this catalog every work should have at least an author or (when this is impossible, as in the case of anonymous works, periodicals, etc.) a title entry.

A common English custom is to use for certain classes of works form or subject entry *only*; such are, almanacs, catalogs, society or academy publications, periodicals, etc. The nearly universal American usage is to treat these works like any others.

3 In addition to author or title entry most works should also be entered under the name of the subject of which they treat.

Of the 191 libraries reporting in answer to the circular sent out for the A. L. A. exhibit, all but 21 had some kind of subject catalog.

4 The author's name should if possible be given in the vernacular, unless all his works have been published in some other language than that of his own nationality. Latin must often be considered the vernacular of medieval names.

5 On author cards titles should be brief, and the author's name and bibliographic details should be given in full. On subject cards the title should be fuller and descriptive, but the author's name may be given with initials only, and some of the more technical or minute bibliographic details may be omitted. (See, however, for the actual practice of different libraries part 2, section 6 of this paper.)

6 In transcribing titles the words and spelling of the title-page should be strictly adhered to, any addition or deviation being plainly indicated by brackets. Punctuation and capitalization need not follow the title-page, except in case of incunabula.

7 Among the smaller points on which substantial unanimity exists may be mentioned:

*a Names with prefixes.*—English and French surnames beginning with a prefix (except the French *de* and *d'*) under the prefix, all other cases under the word following.

*b Compound names.*—In English under the last part, in foreign languages under the first.

*c Capitals.*—No absolute uniformity, but the tendency is to diminish their use as far as possible.

*d Numerals.*—In general, use the Arabic rather than the Roman forms.

*e Periodicals.*—Enter under the first word (not an article). When published by a society refer from the name of the society; but if the periodical bears the name of Bulletin, Proceedings, Journal, etc., enter under the society as author.

*f Names beginning with Mc or St.*—Alphabet as if spelled out, Mac or Saint. The other practice is often followed in directories.

*g Reports of trials.*—Crown and criminal cases under defendant; civil cases under plaintiff; marine cases under the ship.



## B. POINTS ON WHICH OPINION IS DIVIDED.

In regard to the various details of catalogs and cataloging mentioned below, the practice of each of 58 representative and well-known libraries is as far as possible noted. An asterisk [\*] following the name of a library indicates that the present opinion of the librarian favors the particular practice named rather than some other which is in actual use. The abbreviations used are such as will naturally suggest the library for which it stands, but a list of them with the names of the libraries and librarians is given at the end of the paper.

## 1 FORM OF THE CATALOG.

A. A printed catalog, with printed supplements. **Peab.** has a temporary supplement on cards, but only as a preliminary for printing. The linotype has recently been used in a few cases for printing library catalogs and is likely to be often employed in the future. The *Library journal* (Aug., 1894) has an article on linotyping by Nathan Billstein of the Friedenwald Co., Baltimore, and a symposium by several librarians relating their experience. **BPL** is considering the practicability of accumulating material for a general printed catalog by means of the linotype and **Forbes** also has under consideration the plan of printing by linotype and issuing frequent printed linotype supplements. See the article in the *Library journal* for the results obtained by **NewH.** **EnPr.** **Prin.** and **Pratt.** See below under C. the names of libraries which have in use printed catalogs in addition to complete card catalogs.

B Printed catalog, with card supplement. **Ast. Ba.** **BrL.** **Brown** (complete catalog on cards begun), **Com.** **Clev.** **Jers.** **Mil.** **NYFC.** **PhL.** **PhM.** **Spr.** **Worc.** (for circulating dep't). Several of the above have issued printed supplements, and most issue bulletins of recent accessions. (See below, H.)

C On cards complete. (Those marked with a † have an older printed catalog in use also.) **Amh.** **Arm.** **Bos.†** **Bowd.** **BrY.** **Brown** (just begun), **Buf.** **Cal.** **Chic.** (for staff only, a new card catal. for the public begun), **Cin.** **Col.** **Cong.†** **Corn.** (printed catal. of special subjects), **Det.†** **Drex.** **EnPr.** **GrRap.†** **HartP.** **HartTh.** **Harv.** **How.** **LosA.** (not yet complete), **MIT.** **Mon.** (intends to print), **Mich.** **Min.** **NHav.†** **NYFC.†** **NGM.†** **NYS.†** (printed catal. of Law and old general library), **Newt.†** **Ost.†** **Pratt.** **Prin.†** (subj. catal. printed in 1884), **Prov.†** **Sal.†** **Sct.** **StLM.†** (printed catal. of Fiction), **StLP.†** **Wat.†** **Well.** **Worc.** (for reference library), **Yale.**

D On slips pasted in volumes (the British Museum plan). **NY.**

E On slips fastened in bunches like the leaves of a book (the Leyden plan). **Harv.** has had this plan under trial for accessions since 1890, the titles being printed on manila slips.

\* Librarian favors particular practice named rather than some other which is in actual use.

† Has also an older printed catalogue in use.

F The Rudolph indexer or books. **BrL**. (for music), **Det.** (to a limited extent), **Forbes** (under consideration), **NHav.** (tried without complete success), **Newb. Pratt.** (under trial), **Stan.** The San Francisco FPL adopted this device two years ago and has 21 machines in use. The Oakland (Cal.) PL has also recently introduced it.

G Printed finding-lists or other abbreviated form. **Bos. BrL**. (Fiction), **Buf. Chic. Cin. Det.** (Fiction), **EnPr. LosA. Min. NYS.** (intended), **Pratt. Prin. Sal. Set.** See an article in the Library journal, 19: 9 by Kate M. Henneberry on the preparation of printed finding-lists.

H Printed bulletins of recent accessions are issued by the following libraries: **Ba. Bos** (lately discontinued), **BrL** (ann.), **BrY. Buf. Cam. Cin. Corn. Det.** (ann.), **EnPr.** (beginning in 1895), **GrRap.** (typewritten), **Harv.** (1876-94), **Jers. MIT.** (intended), **Mich.** (typewritten), **Mil. Min. NHav. NYM. Newt.** (weekly and ann.), **Ost. PhL. PhM. Pratt. Prin.** (intended), **Prov.** (beginning in 1895), **Sol. Spr. StLP.** (1879-83, 1894—) **Wat.** (ann.).

## 2 THE KIND OF CATALOG.

As stated above, nearly all libraries have or intend to have a subject as well as an author catalog. The different ways of carrying this out are many, but they all fall into two general classes.

A. The author and subject catalogs distinct and separate. The author catalog necessarily contains some title-entries (anonymous works, periodicals, &c.,) and usually numerous title-references.

The subject catalog may be—

*a* In dictionary form. **Amh.** (title-entries included in the subject catal.), **Cin. Cong.** (partly classed), **Forbes** (undecided), **Mich. Mil.** (the card catal.; the printed catal. on decimal classif.), **Prin.** (the card catal.; the printed catal. classified).

*b* Classified on the decimal system (Dewey's) **Arm.** (inclined to change to dict. form), **BrY.** (has also a dict. catal.), **Buf.** (for the public; dict. catal for staff), **Mil.** (printed catal.; dict. catal. on cards), **NYFC. NYS.** **Ost.** (printed catal.; dict. catal. on cards), **Sal.** (for finding-lists, Cutter's classif. preferred), **Well.**

*c* Classified on some other than the decimal system. **Cal. HartTh. Prin.** (printed subj. catal.; shelf-lists with added entries in red form another systematic classed catal.), **StLM.** (Cutter's classif.; will be superseded by dict. catal. for public use), **StLP.** (Harris's classif.).

*d* An alphabetico-classed subject catalog, i. e. a catalog having general classes in alphabetic sequence, with alphabetic subdivisions. **Harv.** (biographic subject-entries now incl. in the author catal.), **NYM. Yale.**

B Author and subject entries combined in a single alphabet, the subject entries being ordinarily under the word expressing most specifically the subject-matter instead of being grouped under general heads. **Ast. BA. Bos. Bowd. BrL.** (subject entries in part classed), **BrY.** (has also the decimal system), **Brown, Buf.** (incl. title entries, for use of staff;



also separate author and title catal. of Fiction; decimal classed catal. for public), **Cam. Chic. Clew. Col. Corn. Det. Drex. EnPr. Forbes** (subj. cards will perhaps be placed in a separate alphabet), **GrRap. HartP. How. Jers. LosA. Man. Min. NHav. NYFC. NYY. Newb. Newt. Ost.** (printed catal. decimal), **Peab. PhL. PhM. Pratt** (Astral Br.), **Prov. Sal. Ser. Spr. StLM.\* StLP.** (for juvenile lit.) **Stan. Wat. Worc.**

**C** No subject catalog. **MIT. Pratt** (except for biog. and bibliog. subjects), **Spr.** (juvenile literature; the general catal. in dict. form).

### 3 CATALOG CASES.

Until recently the usual custom has been to keep the cards of the catalog in drawers, each drawer having ordinarily two rows of cards and intended to be used at its place. The objection to this plan is that a person consulting the cards in one drawer prevents others from using the drawers above or below, and that in order to have all the drawers at a fairly convenient height for consultation the case has to be unduly extended. To obviate these difficulties a lighter drawer or sliding tray has lately been introduced holding a single row of cards and often not as deep as the old drawers. These trays can be readily taken from the case and placed on a table or on sliding shelves set at a convenient height. The libraries which have adopted such trays at least in part are **BA. Bos. Bowd. Chic. Clew. Cong. Harv.** (Divinity School) **LosA. Mil. Min. NYS. StLP.**, while **BrY. Brown. Harv. NYFC. Sal. and Ser.** express their decided preference for this form of case.

**Ast. Buf. and Cam.** use trays or boxes permanently exposed in a fixed position.

### 4 CATALOG CARDS.

**A Size.**—There are two recognized standard sizes in common use, the so-called postal size, 12.5x7.5 cm. and the smaller size, 12.5x5 cm. The larger size is used by **Arm. BrL** (subj. eds.) **BrY. Cam. Chic.** (new public catal.), **Clew.** (since Jan. 1894), **Corn. Det. Drex. GrRap. HartTh.** (subj. eds.) **How. Jers. LosA. MIT. Man. Mil.** (dict. catal.), **Min. NHav. NYS. Pratt, Prin. Sal. Ser. Spr.** (readers' catal.), **StLP. Wat. Well.** (subj. catal.) and is preferred but not used by **NYFC.** and **StLM.** The smaller size is used by **Ast. BA. Bowd. BrL.** (author eds.), **Brown. Cal.** (also a special size), **Clew.** (to Jan. 1894), **Col. Det.** (for Fiction), **HartP. HartTh.** (author eds.) **Mil.** (author index), **NYFC. NYM. Newt. Ost. Pratt** (Astral Br), **Prov. Spr.** (juvenile catal.), **Wat. Well.** (author eds.) **Worc. Yale,** and is preferred by **Sal.**

Special sizes, in many cases very close to one of the standard sizes, are used by the following libraries: **Amh. Bos. Buf.** (author, 12.75x5.2 cm., subj. 12.75x7.25 cm.), **Cal.** (15.7x5.7 cm.), **Chic.** (old card catal.), **Cin.** (6x4 in.) **Cong. Harv.** (12.8x5 cm.), **Mich.** (13.85x8. and 13.35x5.05 cm.), **Peab.** (13x5.7 cm.), **PhL.** (15.5x8 cm.), **PhM.** (14x7 cm.), **StLM.** (5x2½ in.).

\* Librarian favors particular practice named rather than some other which is in actual use.



*B Punching.*—The hole in the card to allow the passage of a wire or rod is generally made in the middle of the lower margin, but **BA.** **Buf.** **Harv.** and **Mich.** put the hole in the lower left-hand corner, and **Worc.** prefers this position. The advantage claimed is that the lower lines are left unobstructed for writing. Some libraries have no hole punched in their cards and either hold them in by rods over the top or consider that no protection is necessary; such are **Bos.** **Cal.** **Cin.** **Cong.** **HartTh.** **Mich.** (larger eds), **PhM.** **Worc.** and **Yale.**

*C. Writing.*—Most libraries still employ a running hand, generally preferring an upright and round letter to a slanted or angular one. A disjoined hand (i. e. one in which each letter is separate) is however used by **Drex.** **GrRap.** **HartP.** **Jers.** **NYS.** **Prin.** **Scr.** **StLP.**

The typewriter is employed for cards by **Bowd.** **BrL.** **Buf.** **Cam.** **Det.** **GrRap.** **HartTh.** **LosA.** **MIT.** **Mich.** **Mil.** **Min.** **NHav.** **Newb.** **Ost.** **Peab.** **Prin.** **Spr.** **StLP.** and **Star.** All of these use the Hammond machine except the **Newb.** and **StLP.** which use the Remington. Of the 191 libraries addressed in the first circular 40 reported the Hammond machine in use and all but 8 found it satisfactory. Three libraries, **Col.** **Harv.** and **StLM.** stated that they found a typewriter distinctly unsatisfactory for cards.

Printed cards are now supplied by the Library Bureau at a moderate price for current new books, while some libraries print their own cards or mount printed slips on cards for their card catalog. Those reporting the use of printed cards are **BA.** (Library Bureau cards, also to some extent printed slips mounted), **Bos.** **Bowd.** (L. B. cards and mounted slips), **Cin.** (slips from Bulletins mounted), **Clev.** (since Oct. 1894), **Harv.** **Jers.** (slips mounted), **NYS.** (L. B. cards), **PhL.** **Prin.** (intends eventually to use linotype altogether), **Prov.** (L. B. cards).

#### 5 CATALOG RULES.

The best codes of rules are mentioned above. Few libraries follow any one code absolutely, but most take one or another (or, it may be two together) as a general guide, and change what details seem advisable. It is this general use which is intended in the following statement:

Cutter's rules are adopted by **Amh.** **Ast.** **BA.** **Bowd.** **BrL.** **Cal.** **Cam.** **Chic.** **Clev.** **Corn.** **Det.** **Drex.** **EnPr.** **Forbes.** **How.** **LosA.** **MIT.** **Man.** **Mich.** **Min.** **NHav.** **NYFC.** **NYM.** **NYY.** **Newt.** **PhL.** **Prov.** **Sal.** **Spr.** **StLM.** **Stan.** **Wat.** **Well.** **Worc.** **Yale.** Cutter and Linderfelt by **Buf.** **Harv.** **Mil.** **Scr.**; Cutter and Albany Library school by **BrY.** and **HartP.** Cutter and A. L. A. rules by **Jers.**; Cutter and Jewett by **Bos.**

The A. L. A. Rules are followed by **GrRap.** **Ost.** **PhM.** and **Pratt**; the Albany Library School Rules by **Arm.** **Col.** (with many changes), and **NYS.**; and Linderfelt by **HartTh.** **Cong.** reports a specially adapted system.

## 6 RELATION OF SUBJECT TO AUTHOR CARDS.

The general principle which should govern the relative fullness of author and subject cards in bibliographic and descriptive particulars would seem to be that on the author catalog, its primary object being to determine whether a given book is owned, it is essential to distinguish accurately (1) between different authors with similar or identical names, (2) between different books by the same author, and (3) between different editions of the same book, while on the subject catalog, which is intended to bring together books on the same subject, the essential point is to display the differences in character and scope between these books. It would follow that whatever degree of accuracy in regard to authors' names is aimed at or whatever bibliographic detail is expressed should be given first of all on the author cards and is of secondary importance on the subject cards, and that any fullness of description in the title further than what is needed to distinguish between two works by the same author or to make a title recognizable by the inquirer belongs first of all on the subject card and is of secondary importance on the author card. In actual practice however there is a great variety in the methods followed, the result no doubt partly of the fact that the author catalog has generally been considered the more important record and was for long the only record, and that the subject catalog is a later development and was at first little more than an index to the other. Certain practical considerations such as the printing of cards, and the copying of one kind from the other instead of directly from the title-page also influence the application of the principles stated.

The practices of the various libraries as nearly as they can be stated in regard to the bibliographic and descriptive particulars of the subject cards (not including the fullness of the author's name) fall into eight classes.

1. Descriptive part of the title less full, bibliographic particulars less full, Amh. Ast. Bowd. Clev. Cong. EnPr. HartTh. How. Mil. Newb. Newt. Peab. PhL. PhM. Prov. Ser. Stan.

2. Descr. less full, bibl. same, Chic. GrRap. Jers. NYFC.

3. Descr. less full, bibl. fuller, Min.

4. Descr. same, bibl. less full, BrL. Col. Corn. Det. Mich. Newt.\*

5. Descr. same, bibl. same (i. e. both cards alike). Bos. Brown. Cin. Drex. HartP. Harv. Man. NHav. NYM. NYY. Ost. Pratt. Prin. Sal. Spr. StLM. StLP. Worc. Yale. Of the above, it may be noted, Bos. Cin. Harv. and Prin. employ print in some form.

6. Descr. fuller, bibl. less full, Forbes. Harv.\* LosA. StLM.\* Wat.

7. Descr. fuller, bibl. same, Arm. BA. BrY. Cam. NYS.

8. Descr. fuller, bibl. fuller, Buf. (gives no bibliog. particulars and only a brief title on author eds.), Cal. Prov.\* Well.

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\* Librarian favors particular practice named rather than some other which is in actual use.

## 7. AUTHOR'S NAME IN HEADING.

The general feeling has been that an author's name in order to distinguish him from others of similar name must be given in as complete a form as possible, and that therefore even names which he has seldom or never himself used should be given if they have once been his by baptism. This, if carried out means much time spent in investigation, for it is frequently found that dictionaries differ in regard to these unused names or their proper order and that authorities must be compared and weighed in order to arrive at a result. The opinion has been gaining ground in recent years that this has been carried too far, while some librarians have even maintained that the object should be to give the author's name as nearly as possible in the form which he customarily uses himself excepting only that initials should be filled out if possible. It is especially difficult to classify libraries on the basis of their usage in this respect or to represent fairly in any brief form their practice. I have divided them roughly below judging as best I could from their answers to my question.

*a* The name generally given, in as full a form as can be found, but with many exceptions as noted, **Arm.** (usually). **Ast. Bos.** (with exceptions), **BrL. Brown. Cal.** (try to use all initials or Cutter's abbreviations), **Cam.** (except French and German), **Chic. Cin. Clev.** (sometimes omit names not used), **Cong. Corn. Det. Drex.** (unless author is decidedly better known under shorter form), **EnPr. GrRap. HartP. HartTh. Jrs.** (put on all initials but do not amplify, inserting usual form in parenthesis, and making reference from it when alph. sequence is different), **LosA. Mich. Mil.** (for printed catalog), **NHav. NYFC. NYS. NYY. Newb.** (in German and French use the well known name and refer from the full name), **Newt.** (of doubtful value), **Ost.** (of doubtful value), **Peab. PhM. Pratt. Prin. Prov. Sal. Scr.** (moderate fullness, sufficient to distinguish), **Spr. StLP.** (as far as can be readily found), **Wat. Well.** (no extensive searching), **Worc Yale.**

*b* Omit (especially in French and German) such names as are not ordinarily used by the author. **Amh. BA. Bowd.** (formerly gave names in full), **Bry.** (fill out initials if possible), **Col.** (less known names given in full), **EnPr.\* Forbes** (pursues a middle course), **Harv. How.** (as correctly as possible, not as full as possible), **MIT.** (give as full as ever used by the author), **Man.** (fill out initials, but never search for unused names), **Pratt\* Sal.\* Stan.**

*c* Follow the title-page in hand, and give but little investigation. **Buf.** (except in cases where identification is necessary), **Min.** (did attempt to find full names, but now believe it to be wasted time to do more than follow title-page except in rare cases). **NYM. PhL.** (added information is bracketed elsewhere), **StLM.** (unless necessary to give full name for identification).

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\*Librarian favors particular practice named rather than some other which is in actual use.



## 8. ENTRY OF PSEUDONYMOUS WORKS.

The rule to enter under the real name when it can be found and refer from the pseudonym is still followed by the larger number of libraries, many making occasional exceptions, but the following libraries reverse the rule and enter under the pseudonym when it is customarily used by the author, and refer from the real name, **BA. Brown. Buf. Cal. Drex. EnPr.** (in finding-lists), **Forbes. GrRap. Harv.\* MIT.** (to a limited extent). **Man. Mil.** (card catal.) **NHav. NYFC. NYM. PhL. Sal.\* StLM. StLP. Stan. Wat.\* Worc.**

## 9. ENTRY OF ANONYMOUS WORKS OF UNKNOWN AUTHORSHIP.

The general rule is to enter under the first word not an article, but the following libraries except prepositions also and enter under the first word not an article or preposition, **Bowd. BrY. Harv.** (except fiction) **MIT. NYM. PhM. Prov. Stan. Yale.** A third method is to enter under the first *prominent* word, but while this is occasionally resorted to by **Newb. Ost. and Well.** it is only **Cin.** which makes a practice of it, and this library excepts fiction.

*a* Anonymous biographic works. Most libraries make an exception of these and enter under the name of the person *only*; such are **Ast. Bos. Bowd. BrL. BrY. Cal. Cam. Cin. Clev. Corn. EnPr. Harv. How. Mich. NYFC. NYM. NYS. NYY. Newb. Newt. Ost. Scr. Spr. Stan. Worc.**; also the following which occasionally make a title-entry also, **Amh. Arm. Buf. Det. Forbes. Mil. Min. PhL.**

*b* Anonymous works relating to a place. A smaller number of libraries make an exception of these works also and enter *only* under the name of the place; such are **Ast. Bowd. BrL. BrY. Cal. Cam. Cin. Clev. EnPr. How. NYFC. NYM. NYY. Newb. Spr. Stan.**; also the following which occasionally make a title-entry also, **Amh. Buf. Det. Forbes, Mil. Min. Newt. PhL.**

## 10 ENGLISH NOBLEMEN.

Usage is not very unevenly divided in the treatment of these troublesome persons; the following libraries make their rule to enter them under their titles, generally with references from their family names, **Amh. Ast.** (usually), **BrY. Brown** (generally), **Buf.** (unless family name is better known), **Cal.** (usually), **Cam. Chic. Col. Corn. Drex.** (unless family name is much better known), **EnPr.** (on finding-list), **Forbes, HartP. Harv.\* Jers. MIT. Mil.** (on cards), **Min. NHav. NYFC. NYM. NYS** (with a few exceptions), **NYY. PhL. PhM. Pratt, Sal. Scr. StLM. StLP. Stan. Well. Worc.**; while the following enter in general under the family name and refer from the title, **Arm.** (usually), **BA. Bos. Bowd. BrL. Cin. Clev. Cong. Det. EnPr.** (on cards), **Harv. How. LcsA. Man.** (unless title is better known), **Mich. Mil.** (printed catal.), **Newb. Newt. Ost. Peab. Prin. Prov. Spr. Wat. Yale.**

\* Librarian favors particular practice named rather than some other which is in actual use.

## 11 NAMES OF SOVEREIGNS.

While most names when used as headings should be written in their vernacular form, an exception has generally been made for the names of sovereigns and these are usually given in their English form. A few libraries however write these also in their proper vernacular; they are **Brown** (in general), **Cong. Drex. GrRap. HartTh. Jers. MIT.** (for more common languages), **Mil.** (on printed catal.), **NYFC. NYS.** (with brief second entry under English), **Newt.** (recent change), **Prov.**

## 12 NAMES OF CITIES.

The general custom has been to use the proper vernacular form for the names of cities and towns unless a different English form were well established, as e. g. Munich for München, Florence for Firenze. The following libraries however use the vernacular form in all cases, **Cal. Cin. Cong. NYS. Prin. Prov.**

## 13 ENTRY OF SOCIETIES, ETC.

The best method to pursue in entering societies in an alphabetic catalog has always been a difficult question and one that has received many answers. There are at least five distinct systems each in use by a number of libraries, though it should be said that few libraries are altogether consistent in following the rule they adopt.

*a* Enter always under first word of title. **Bos. Clev.** (under first *distinctive* word), **Cong. Corn.** (except foreign universities), **Det.** (with references from familiarly used titles), **EnPr. HartP. Jers. LosA. Mich.** (sometimes under name of place), **NHav. Newt. Ost. PhL. Prin.\* Stan.**

*b* Enter under the name of the place where situated. **Ast. Cin. PhM. Prin. Spr. Wat. Yale.** **Amh.** and **How.** follow sometimes one rule and sometimes the other of these two.

*c* Enter under the name of the place when that enters into the name of the society, in other cases under the first word. **BrL. Brown, Harv. NYM. Well.**

*d* Enter English and American societies under the first word, others under the name of the place. **BA. Cal. Col.** (with many variations), **HartTh. Man. NYY. Newb. Peab.** (not incl. all foreign societies), **Worc.**

*e* The "5th plan" proposed by Mr. Cutter in his rules, § 56. The details of this plan are too long to state here, but in general it inclines to entry under the first word of the corporate name except for local bodies and foreign universities. **Arm. Bowd.\* Cam. Chic. Drex. Forbes, MIT.** (with some further enlargement of exception 7), **Mil.** (with some differences, see Linderfelt's Eclectic rules, §§ 200). **Minn. NYFC. NYS. Pratt, Prov. Sal. Scr.** (with exceptions), **StLP.**

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\* Librarian favors particular practice named rather than some other which is in actual use.

## 14 ENTRY OF SERIES.

Most libraries now enter a series (as American commonwealths, English men of letters, &c.) under the first word of the title, unless better known by the editor's name, and often with reference from the editor, but the older practice was to enter under the editor as being properly the author of the series. The following are the only libraries of those asked who retain this rule, **BA. BrY. Cin. Clev. HartTh. Harv. NYFC. Ost. Peab. Prin. BA. NYFC. and Harv.** express their preference for the rule now generally followed.

## 15 THE GERMAN Ä, Ö, Ü.

In alphabetizing shall these vowels be treated as æ, œ and ue or as simple a, o, and u? Usage is almost equally divided.

**Arm. Bowd. Brown, Buf. Cal. Cam. Cin. Col. Cong. Corn. Det. Forbes, GrRap. How. LosA. MIT. Mil. Min. NYFC. NYS. Newb. Newt. PhM. Pratt, Sal. Scr. StLM. Well. Worc.** treat these letters as simply a, o, and u.

**Amh. Ast. BA. Bos. BrY. Chic. Clev. Drex. HartP. HartTh. Harv. Jers. Man. Mich. NHav. NYM. NYY. Ost. Peab. PhL. Sal.\* Spr. StLP. Stan. Wat. Yale** arrange these letters as if they were written æ, œ and ue. **Prov.** treats them as separate characters.

## 16 INDICATION OF SIZES.

The fold symbols 8<sup>o</sup>, 4<sup>o</sup>, &c. are used by **Ast. Bos. BrL. Cam. Chic. Cin. Cong. Corn. Det. Harv. How. NYM. Newb. Peab. Prin. Spr. Wat. Well.** (on author cds.), **Worc. Yale**, and are preferred by **BA.** The letter abbreviations, O., Q., &c., are used by **Amh. Arm. BA. Bowd. BrY. Brown, Buf. Cal. Clev. Col. Drex. Forbes, Jers. LosA. MIT. Mich. Mil. Min. NHav. NYS. NYY. Newt. Ost. PhL. PhM. Pratt, Sal. StLP. Stan. Well.** (subj. cds). The height measurement *in centimeters* is given by **Clev. EnPr.** (formerly used fold symbols), **HartP. HartTh.** and **Prov.** and is approved by **Prin.** The measurement *in inches* is given by **Bos.** for American books, and is approved by **StLM.**

All indication of size is omitted by **GrRap. Man. NYFC. Pratt** (except the larger and smaller sizes), **Scr.** and **StLM.**

## 17 PAGING.

The number of pages is given on the catalog by **Arm.** (main paging only), **Bos. Bowd. BrY. Cin.** (for works in 1 to 5 vols.), **Clev. Cal. Cong. Corn. Det. Drex.** (main paging only), **HartP. MIT.** (without too much detail), **Mich. Min. NHav. NYS. NYY. Ost.** (except fiction), **PhL. PhM. Sal.** (without detail), **Stan.** (on author cds.), **Well.** (on subj. cds. without detail). Many of the above omit paging altogether if the work is in more than one volume.

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The number of pages is given only when less than 100 by **Amh. Brown**, **Cal. Forbes**, **Newb. Peab.** **Stan.** (on subject eds.) **Wat.** and **Yale**; when less than 100 or over 600 by **Harv.**; and when less than 50 or over 500 by **Pratt**; all of these omit it in other cases. **Sal.** recommends giving the pages only when less than 50. The number of pages is omitted in all cases (except, it may be, incunabula, etc.) by **Ast. BA. BrL. Buf. Cam. Chic. EnPr. GrRap. HartTh. How. Jers.** (except in accession-book), **LosA. Man. Mil. NYFC. NYM. Newt. Prin. Prov.** (except in accession-book), **Ser. Spr. StLM. StLP. Well.** (on author eds.), **Worc.**

## 18 NAMES OF ARTISTS.

Artists, especially those of the medieval and Renaissance periods, are often better known under sobriquets than under their family or baptismal names. The following libraries give the preference to the sobriquet over the real name as a heading: **Amh. Arm. Ast. BA. Bos.** (sometimes), **Bowd. BrL. BrG. Brown. Buf.** (formerly entered under the real name), **Cal. Cam. Chic. Cleve. Col. Drex. EnPr.** (on finding-list), **Forbes, HartTh. Harv.\* Jers. LosA. Man. Mich. Mil.** (on card catal.) **Min. NHav. NYM. NYS. Newt. Peab. PhL. PhM. Pratt. Sal. Ser. StLM. StLP. Stan. Worc. Yale.**

The following enter under the real name: **Cin. Cong. Corn. Det. EnPr.** (on card catal), **GrRap. HartP. Harv. How. Mil.** (printed catal), **NYFC. NYY. Newb. Ost. Prin. Prov. Spr. Well.**

## 19 transliteration.

The rules and tables compiled by a committee of the A. L. A. and printed in the Library journal, 10: 302 and in the appendix to Cutter's rules have been generally adopted by those librarians which have occasion to transliterate, but **BrL. HartTh. Newb. Peab.** and **StLP.** state that they do not use them. **Det.** sometimes follows other catalogs and **Corn.** follows the British Museum for Sanskrit names.

## 20 SUBJECT HEADINGS IN A DICTIONARY CATALOG.

Sections 96 and 97 of Cutter's rules provide that "a work treating of a general subject with special reference to a place" shall be "entered under the place with merely a reference from the subject," that is, that subject headings shall be made subordinate to place headings and not place headings to subject headings, that headings such as "*Boston, Biography*," "*New York, Geology*," "*Greece, Art*," "*France, Law*," and the like shall be used rather than "*Geology, New York*," "*Music, Germany*," "*Sculpture, Greece*," and the like.

The following libraries hold in general to the rule as laid down by Cutter: **Ast.** (except in some philosophical subjects), **BA. Bos.** (not considered satisfactory by itself; special lists in the Bulletin give the

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advantages of the other system), **Cam. Chic.** (in general, in the old catal.), **Col.** (follow the method which seems in each case most useful, with strong leaning from experience to the Cutter rule), **Det. GrRap.** **Min. NYM. NYY. Newt.** (entries often made under both forms), **Peab. Pratt, Sal. StLP.** (dict. catal. of juvenile literature only), **Wat. Worc.**

Many libraries however now incline especially in art and science subjects to make the place subordinate to the subject heading; such are **Amh. BA.\* Bowd. BrL. BrY. Brown, Cal. Clev. Cong. Corn. Drex. EnPr. Forbes, Jers. LosA.** (in all cases except literature and history), **Man. Mich. Mil. Min.\* NHav. NYFC. Newb. Ost. PhM. Prin.** (much of the old work on the other basis, making double entry frequently necessary), **Ser. Spr. StLM. Stan. Wat.\*** (for a large catalog). **HartP.** and **Prov.** enter in both ways, and **How.** replies that it "gives equal prominence to subject and place."

The A. L. A. appointed a committee in 1892 to study the question of subject headings and report. They reported to the Chicago Conference in 1893 (see the Proceedings, p. 79) treating of certain general principles and attempting to draw the line between subjects which can best be made subdivisions under places and those which should themselves have place subdivisions under them. In 1894 the same committee reported a plan for a list of subject headings which was approved by the Association and is to be published by its publishing section.

A list of the 58 libraries follows, from whose replies the facts stated above in regard to catalog and cataloging have been drawn: The abbreviations used are given in the same list.

Amh.	Amherst College Library, Amherst, Mass.	W. I. Fletcher, librarian.
Arm.	Armour Institute, Chicago, Ill.	Katharine L. Sharp, librarian.
Ast.	Astor Library, New York, N. Y.	Robbins Little, superintendent.
BA.	Boston Athenaeum, Boston, Mass.	William C. Lane, librarian.
Bos.	Boston Public Library.	Herbert Putnam, librarian.
Bowd.	Bowdoin College Library, Brunswick, Me.	Geo. T. Little, librarian.
BrL.	Brooklyn (N. Y.) Library.	W. A. Bardwell, librarian.
BrY.	Brooklyn (N. Y.) Young Men's Christian Association.	Silas H. Berry, librarian.
Brown.	Library of Brown University, Providence, R. I.	Harry L. Koopman, A. M., librarian.
Buf.	Buffalo (N. Y.) Library.	J. N. Larned, superintendent.
Cal.	Library of the University of California, Berkeley, Cal.	J. C. Rowell, librarian.
Cam.	Cambridge (Mass.) Public Library.	W. L. R. Gifford, librarian.
Chic.	Chicago Public Library.	Fred. H. Hild, librarian.
Cin.	Public Library of Cincinnati, O.	A. W. Whelpley, librarian.
Clev.	Public Library, Cleveland, O.	Wm. H. Brett, librarian.
Col.	Columbia College Library, New York, N. Y.	Geo. H. Baker, librarian.
Cong.	Library of Congress, Washington, D. C.	A. R. Spofford, librarian.
Corn.	Cornell University Library, Ithaca, N. Y.	Geo. Wm. Harris, librarian.
Det.	Detroit (Mich.) Public Library.	H. M. Utley, librarian.

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- Drex. Drexel Institute Library, Philadelphia, Pa. Alice B. Kroeger, librarian.
- EnPr. Enoch Pratt Free Library of Baltimore City, Md. Bernard C. Steiner, librarian.
- Forbes. Forbes Library, Northampton, Mass. C. A. Cutter, librarian.
- GrRap. Public School Library, Grand Rapids, Mich. Lucy Ball, librarian.
- HartP. Hartford (Conn.) Public Library. Caroline M. Hewins, librarian.
- HartTh. Case Memorial Library of the Hartford Theological Seminary, Hartford, Conn. Alfred T. Perry, librarian.
- Harv. Harvard University Library, Cambridge, Mass. Justin Winsor, librarian.
- How. Howard Memorial Library, New Orleans, La. William Beer, librarian.
- Jers. Free Public Library, Jersey City, N. J. Geo. Watson Cole, librarian.
- LosA. Los Angeles (Cal.) Public Library. Tessa L. Kelso, librarian.
- MIT. Massachusetts Institute of Technology, Boston, Mass. Clement W. Andrews, librarian.
- Man. City Library, Manchester, N. H. Kate E. Sanborn, librarian.
- Mich. General Library, University of Michigan, Ann Arbor, Mich. Raymond C. Davis, librarian.
- Mil. Public Library of the City of Milwaukee, Wis. Theresa West, librarian.
- Min. Minneapolis (Minn.) Public Library. James K. Hosmer, librarian.
- NHav. Free Public Library, New Haven, Conn. W. K. Stetson, librarian.
- NYFC. New York Free Circulating Library. Ellen M. Coe, librarian.
- NYM. Mercantile Library of New York. W. T. Peoples, librarian.
- NYS. New York State Library, Albany, N. Y. Melvil Dewey, director.
- NYY. Library of the Young Men's Christian Association, New York City. R. B. Poole, librarian.
- Newb. Newberry Library, Chicago, Ill. J. V. Cheney, librarian.
- Newt. Newton (Mass.) Free Library. Elizabeth P. Thurston, librarian.
- Ost. Osterhout Free Library, Wilkes Barré, Pa. Hannah P. James, librarian.
- Peab. Library of the Peabody Institute, Baltimore, Md. P. R. Uhler, librarian.
- PhL. Library Company of Philadelphia, Pa. James G. Barnwell, librarian.
- PhM. Mercantile Library, Philadelphia, Pa. John Edmands, librarian.
- Pratt. Pratt Institute Free Library, Brooklyn, N. Y. Mary W. Plummer, librarian.
- Prin. Library of the College of New Jersey, Princeton, N. J. Ernest C. Richardson, librarian.
- Prov. Providence (R. I.) Public Library. William E. Foster, librarian.
- Sal. Salem (Mass.) Public Library. Gardner M. Jones, librarian.
- Ser. Scranton (Pa.) Public Library. Henry J. Carr, librarian.
- Spr. City Library Association, Springfield, Mass. William Rice, librarian.
- StLM. St. Louis Mercantile Library. Horace Kephart, librarian.
- StLP. St. Louis Public Library. F. M. Crunden, librarian.
- Stan. Leland Stanford, Jr., University Library, Palo Alto, Cal. E. H. Woodruff, librarian.
- Wat. Free Public Library of Watertown, Mass. Solon F. Whitney, librarian.
- Well. Wellesley College Library, Wellesley, Mass. Lydia B. Godfrey, librarian.
- Worc. Free Public Library of the City of Worcester, Mass. Samuel Swett Green, librarian.
- Yale. Yale University Library, New Haven, Conn. Addison Van Name, librarian.



MUSEUMS, ART GALLERIES, AND LECTURES IN CONNECTION WITH  
PUBLIC LIBRARIES.

By JAMES BAIN, Jr., Chief Librarian, Toronto Public Library.

The chapter by Professor Frieze, in the report on the Public Libraries of the United States, by the Bureau of Education for 1876, on "Art museums and their connection with public libraries" was the first official proposal to extend the work of public libraries. It does not seem to have commended itself to American libraries, for few, if any, institutions based on his proposed lines have been organized since that date. As he then pointed out, the collection of paintings and sculpture exhibited by the Boston Athenæum was the only one of the kind connected with a library, and speaking of the value of this, he says that he and many others look back with gratitude to the comparatively small and humble art museum of this institution as the training school to which he owes in a great degree his power to appreciate the rich treasures of sculpture and painting in the Old World. In 1881 Mr. James Hibbert Preston, England, printed for private distribution "Notes on free public libraries and museums" which formed part of the materials collected to assist in framing the groundwork of a report on the proposed Harris Free Library and Museum, in which he reviewed the history and present condition of the public libraries of Europe and America and pressed strongly the claims of an art gallery and museum to form part of the proposed library. In the same year the late Dr. Holmes, of the New York State Library, Albany, proposed, in a valuable paper read at the Washington conference of the A. L. A., to go further than Professor Frieze, and urged the addition of popular museums as well as of art galleries to public libraries, calling attention to the remarkable series of amendments in the laws of the United Kingdom specially directed to this end. In the discussion which followed, the two speakers who opposed the views of Dr. Holmes stated that they did not think it expedient to divert any part of the taxes for libraries to the maintenance of museums, lectures, or concerts. "Where a town or city can get only a small amount of money for educational purposes, it is best not to run the risk of dividing this amount too much in trying to further several objects. The result might be, poor schools, a poor library, and a poor museum." Mr. S. S. Green said that in Worcester the library was closely connected with the natural history society and two art societies, which freely used the books in the library individually and in classes. The feeling of the convention was evidently against Dr. Holmes's proposals.

At the Lake George conference of the A. L. A., 1885, Dr. Holmes read a supplement to his paper, rehearsing the history of the movement in the United Kingdom, and again urging the adoption of a similar act in the various States of the Union. No discussion of the

paper is reported. Among the papers read at the Birmingham meeting of the L. A. U. K., 1887, was one by C. Whitworth Wallis, curator of the Birmingham art galleries and museum, on the connection between free libraries and art galleries and museums, which elicited considerable interest. The writer was fortunate in being able to review the successful career of an institution which he had been instrumental in building up and of being able to exhibit it to the members of the association in daily working order. Mr. Thomas Greenwood published in 1888 a book on Museums and Art Galleries, which contains a general history of museums in Great Britain and Ireland with a detailed description of the more important, together with a brief account of those in America, Germany, France, Belgium, Holland, Denmark, and Italy. It is of special value for its descriptions and statistics of rate-supported museums and art galleries of the United Kingdom, almost all of which are connected with public libraries. The aids to popularizing the museum are worthy of careful consideration. Inquiries made at the Baltimore meeting of the adjourned Lakewood convention of the A. L. A., 1892, as to what had been done in this direction by any members failed to draw any response, but the president-elect, Mr. Dewey, stated that he was disposed to view the matter in a different light from that of former days, and recommended careful consideration of the question as preparatory to fuller discussion at a future meeting.

*Desirability.*—"Libraries combined with museums in the same institution are desirable for a double purpose. One is that museums of science and art have an intrinsic value in themselves for the education of any community. The other is that the association of the free public library with free museums, in the same building and under the same trustees, increases the utility of and interest in both, with the least expenditure. The museums contemplated are of any and every kind attainable—of science, art, or both together. They should be allowed to embrace all objects which it might suit the means, the taste, or the generosity of the citizens of a town to supply. In art, they would by no means be limited to collections of paintings and sculpture, but would embrace every form of production from the hand of man. A mere enumeration of the objects which properly compose such art museums indicates the vastness of the field from which the supply is to be drawn: Pottery and porcelain; carvings in wood, ivory, and shell; inlaid and lacquered work; jewelry, and works in gold, silver, copper, brass, and iron; textile manufactures, laces, embroidery, and carpets; articles of furniture and house decoration; arms and armor; engraved gems, coins, medals, seals; illustrations of architecture, engraving, typography, ancient manuscripts, historic pictures and portraits. Many of the above carry with them the idea of archæology, and the collections would naturally receive whatever would portray ancient Europe, Rome, Greece, Egypt, and Assyria, reaching back to the prehistoric period. The New World would be exhibited by the earliest memorials of human

existence to be found here, coming down to all such as illustrate the civilization and customs of the native races of this hemisphere to the present time. There remains to be enumerated museums of natural science, embracing the animal and vegetable kingdom and inorganic matter."<sup>1</sup>

Of the value of such museums there can be little difference of opinion; as means of educating, of awakening interest in science and art in untrained minds, of stimulating and guiding historic and artistic taste, as affording storehouses for the numberless articles which we would fain preserve for the pleasure and instruction of future generations, the museum should be as necessary to the city or town as the free library. Mr. Emerson sounds the true note: "I wish to find in my own town a library and museum which is the property of the town, where I can deposit this precious treasure, where I and my children can see it from time to time, and where it has its proper place among hundreds of such donations from other citizens who have brought thither whatever articles they have judged to be in their nature a public rather than a private property. A collection of this kind, the property of each town, would dignify the town, and we should love and respect our neighbors more; obviously, it would be easy for every town to discharge this truly municipal duty."<sup>2</sup>

The advantage of uniting the public library, museum, and art gallery under one management are equally apparent, either from the standpoint of utility or of expense. The power of referring directly from the printed description to the work of art is of immense value to the art student and art worker. No book can convey the same impression as the article itself; nor, on the other hand, can the student fully appreciate the work of art till his attention has been drawn directly to its salient features. The student or the miner may pore over Dana's *Mineralogy* for hours without getting that definite idea of the appearance and character of any mineral that he would gain in as many minutes by aid of the museum specimen. With books and specimens the young archæologist or ethnologist realizes rapidly what we know of our predecessors on this continent or of the condition of the yet uncivilized races of the earth. In all branches of art and science the book and specimen are complementary and should be drawn together as closely as possible. American librarians have not strongly disputed these statements, but have rested their opposition to the union with either museums or art galleries on two strong practical objections:

1. That the librarian has quite enough to do to look after his books; and
2. That all available funds are required for buying books and maintaining the library.

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<sup>1</sup> Dr. Holmes: *Library Journal*, VI, 81.

<sup>2</sup> *Society and Solitude*, p. 118.



With the first objection I will deal when considering how libraries and museums should be managed, and for the second see whether any light can be obtained from abroad.

*History in the United Kingdom.*—In the United Kingdom private and semiprivate libraries have grown up side by side, and it is curious to notice that the museums were the first to be made free. The relics of Britain's varied civilization during successive centuries constituted a treasure of archaeological and antiquarian interest which could not well be looked for in newer lands, and which continued to inspire the antiquary to entrancing but unrequited toil, gathering together materials for a museum. When to these were added the gleanings from foreign lands, brought by collector, traveler, or sailor, and later when the natural sciences awakened a love for systematized collections of rocks, plants, animals, birds, and shells, the museum assumed proportions which compelled attention to the necessity for providing proper accommodation and supervision.

To depend upon voluntary subscriptions was to insure a slow and painful extinction. The dusty and moth-eaten collection in a dark room, rarely visited, was proverbial. The museums act of 1845, by which public free museums were authorized to be established in cities and boroughs containing not less than 10,000 inhabitants was the first step toward putting things on a popular basis. By the museum and libraries act of 1850, the act of 1845 was repealed, and town councils were authorized to establish public libraries and museums in towns where a two-thirds vote could be secured. This act restricted the library rate to a half-penny in the pound, and the amount raised was only applicable to maintaining a museum and library when formed, and did not allow any part of the funds to be expended in buying books for the library or specimens for the museum. The public libraries act of 1855 extended these powers and authorized increasing the library rate to one penny in the pound, and also the appropriation of any part of the rate to the purchase of books and specimens. Amendments were made to this act, in 1866, 1868, 1871, 1877, 1884, 1885, which, among other improvements, gave permission to any public library, museum, school of science or art, or art gallery, to add any or all of these to its institution, and extended the provisions of the public libraries act to smaller parishes in combination, any two or more of which having an aggregate population exceeding 5,000 persons, are empowered, after taking the necessary legal steps, to establish a public library or museum, or both. As the most prominent example in the world, the British Museum at once occurs to every mind. But while exhibiting the advantages of combination, its national character places it on an entirely different footing from those under consideration.

In 1888, 41 free public libraries and museums or art galleries, or both, were in operation. There were also 3 libraries and museums supported by subscription, and 8 free museums. Salford (population, 198,140) and

Warrington (population, 45,253) were the first to adopt the act of 1846. The former opened its museum in 1850, when its population was only 87,533, and art gallery in 1854, and between these dates and 1880 over 15,000,000 visitors were admitted, and the annual issue of books in the library had risen to 386,528. The books, pictures, specimens, and buildings were valued at from \$300,000 to \$350,000. The city of Liverpool (population, 517,950) is an excellent and well-known example of the success which has attended the effort to combine the different institutions under a common government for a common good. One of the striking features which catches the eye of the traveler on landing at Liverpool is the handsome group of buildings which crown the rising ground in the center of the city. It is the combined free library, museum, lecture hall, and picture gallery which public enterprise and private beneficence have given to the citizens. First established as a library in 1852, it now contains in the lending library 60,147 volumes, and issued for home reading in 1892 463,256, besides 636,860 used in the reading rooms. It also contains 101,262 volumes in its reference library, from which 201,705 were issued in 1892. In addition to this, 327,448 persons visited the museum, 619,647 the art gallery, and 38,611 attended the lectures. The building for the library and museum was given by Sir William Brown in 1860 and the art gallery in 1871. The rate produced in 1892, £11,300, which, with the small fee charged for entry to the loan exhibition, seems to be the entire revenue of the institution, though the committee state that owing to a falling off in the amount of the rate, "it would have been impossible to maintain the institutions in their present state of efficiency" without an extra grant from the city council. The report of 1891 says "the desire of the committee is to popularize the noble and unique group of institutions under their control and to avail themselves of all the many and varied opportunities they afford for the education and entertainment of the people." In 1892 they report "that free lectures have now for a period of twenty-eight years formed part—and in their results a most important part—of the educational work carried on in connection with these institutions," and furnish a list of thirty-one lectures on science, history, geography, and art, illustrated by experiment or lime light. The museum has been enriched by such magnificent gifts as the Philips collection of minerals, the Austin collection of fossils, the Mariat collection of shells, the Earl of Derby's collection of mammals and birds, comprising 20,000 specimens, the Mayal collection of historical art treasures, and numerous smaller collections of interest and value. The art gallery has also been increased by frequent gifts, so that the permanent collection forms the nucleus of a grand gallery which will continue to attract visitors at times when the loan exhibitions are at an end. The number of visitors and the continuous increase of readers in the library seems to be the fitting answer to the anticipations of the committee "that one of the primary inducements to forming the collections was to instruct not only through



the works themselves, but also through the literature in the library." And we find expressly noted in the report for 1892 the large increase in books on science and art.

The Birmingham library has a somewhat similar record. Established as a library in 1860, it was not till 1864 that the first steps were taken to form an art gallery, and not till 1870 when the formation of an industrial museum was commenced. Soon it was found that the comparatively small rooms were overcrowded, and the committee were compelled to remove both the museum and art collections to Ashton Hall, about  $2\frac{1}{2}$  miles from the city. But in 1881 arrangements were completed with the municipal authorities enabling the generosity of private individuals to endow the beautiful building near the library. In 1891 the library contained in the reference department 110,759 volumes, and the number issued was 375,092. The lending library also contained 58,471 volumes, with an issue for home reading of 480,004. The number of visitors to the museum and art galleries in 1888, the last year for which I have statistics, was 1,105,268. The proceeds of the rate in 1891 was £9,874 9s. 10d., and £679 11s. 4d. was realized from catalogs, fines, etc., making a total of £10,554 1s. 2d. This sum was absorbed by the main library and branches; but gifts covered the additional expense of the museum and art gallery. This does not seem a large expenditure for so large and wealthy a city as Birmingham (population, 429,170), and shows what can be done by careful and energetic extension in all directions. Mr. Wallis thus sums up the "relations which exist between this free library, art gallery, and museum: First of all their aims are identical, for they have in view the one end, the culture of the people; secondly, they appeal to the same mental faculties with which all men are endowed in a greater or less degree; and thirdly, to a very great extent one of them, the museum, to carry out its proper functions to a great measure is dependent upon the other, the library. It leans upon it, as it were; it looks to it to minister to the museum visitors that knowledge and information which the most comprehensive catalog and labels in the world would fail to supply. In a case like Birmingham this is particularly the case, for the books on art and art workmanship are, as a rule, beyond the reach of the ordinary workman, and his appetite having been whetted by a slight description of some object or process in the museum, he must of necessity have recourse to the library to acquire further knowledge."

Other instances might be given of the success of the joint institutions in the United Kingdom, and reference made to Booth (population, 27,354), Bradford (population, 216,360), Dundee (population, 155,680), Exeter (population, 47,154), Leicester (population, 47,154), Nottingham (population, 211,984), Sheffield (population, 324,240), Swansea (population, 55,417). But sufficient has been said to show:

1. That the union of the three institutions has been successful in the United Kingdom.



2. That it is possible to carry on all the work on the moderate rate which the act permits them to collect.

3. That invariably museums and art galleries under proper management commend themselves so much to the wealthy that a large proportion of their contents are given or lent.

Mr. Justin Winsor<sup>1</sup> was struck by the fact "that the public library system in this country (England) takes on, in its museums of antiquities, an adjunct in the popular instruction which we have failed in America to embrace in its agencies. The local antiquary and archæologist has here a recognized duty beside the public librarian. I found at Worcester, for instance, that on the inner walls of the library building were painted geological charts of the neighborhood, thus presenting to the minds of the young the place in the development of the country's surface of the remains to be seen in the cases. Similar helps, I was told, were arranged in the library at Shrewsbury. I have met everywhere with people who were popularizing a knowledge of the local British and Roman antiquities, and one can not fail to see how the dissemination of such information makes more intelligent readers for such books as Green's *Making of England*."

Mr. Greenwood,<sup>2</sup> speaking of the museum and gymnasium act of 1891 says: "Here again, as with the libraries, the towns have not been slow to avail themselves of the power conveyed by these acts. Public library and museum must necessarily go hand in hand, and our hope is that wherever there is one of the institutions the twin brother should soon come into operation."

After some years' experience Mr. Hibbert (Preston) says: "The views that I have expressed in my notes as to the conjunction of libraries and museums I still hold. A library considered as a means of public instruction is incomplete without a museum, both as respects the fine arts and physical science."

*In the United States.*—In the United States the conditions of life were different from those in the older lands. The population was sparser, the means of obtaining a higher education more limited, and collections of books were only to be found in the older cities of the Eastern seaboard, and there in colleges and private houses. It was natural, therefore, that the demand only extended to free libraries. Once established the energies of the librarian and trustees were expended in increasing the number of volumes and extending the facilities for reading. The soil also yielded few antiquities. The stone tools and weapons of the Indian were indeed found in many districts, but they did not convey to the finder the same human interest which the Roman, Saxon, and Norman remains did to their fellow-workers in Europe. Nor had natural history collections in any general sense been begun. But in forty years great changes have taken place. Libraries have been established over the

<sup>1</sup> Nation: 51,244.

<sup>2</sup> Review of Reviews, May, 1893.

whole country—many of them in large and beautiful buildings. The number of books per capita has become equal to almost any country in the world. Annual meetings of the A. L. A. have directed the attention of librarians to many channels through which to extend the knowledge of the contents of their books and of increasing their use. Does it not seem as if the time had come to adopt fuller and more perfect methods of reaching, directing, and stimulating the popular taste?

In 1876 Professor Frieze was able to point to the instance of the Boston Athenæum as the single example of an art gallery in connection with a library, and the position yet remains unaltered. But a natural movement in the direction of extension is taking place. In 1885 Minnesota granted a charter to Minneapolis creating a board with power "to establish and maintain public libraries and reading rooms, galleries of art and museums." This library has partially availed itself of the power and possesses some valuable paintings, and has on loan for exhibition some casts from the antique, ceramics, tapestries, and miscellaneous specimens of art workmanship. The New York Free Circulating Library reports (1889) that "all the libraries have been enriched by a gift of a series of fine steel engravings, permanent photographs, and casts of celebrated sculptures. These have been selected with discrimination and care, appropriately framed, and placed on the walls. The series comprises historical, geographic, and artistic illustrations from the works of the best artists, and greatly promote a taste for books on these subjects. A zest for reading is encouraged in this way: Under a fine line engraving of Washington or Napoleon is placed a list of all the works in the library relating to him or his period; under the photographs of the best monuments of Egypt is a list of books relating to Egyptian art and history, while Raphael and his best known Madonnas, and casts from Lucca della Robbia and other Italian artists serve to introduce the literature of Italian art."

Worcester, Toronto, and some other libraries report that the exhibition of the prints of the Arundel Society have tended to awaken an interest in art and the history of these times, while others by the exhibition of illuminated manuscripts, artistic printing and binding, are working to the same end. Malden, Mass., reports (1888) even more decidedly. "If there has ever been a doubt as to the expediency of connecting an art gallery with a public library it has been dispelled in our experience, for we can see many advantages which have arisen from their connection. Visitors who might otherwise have never come to the library are gradually brought within its influence by the means which attract them. Better still the gallery is a most important and helpful companion to our books; for its pictures, all of which are good, and several excellent, may often answer questions which the books can not, or create an interest which the book may afterwards foster. There is a sincere art spirit among our people which the library has done much to stimulate and which the gallery will tend to extend and per-

petuate. A useful adjunct to both the library and the gallery which will come in time will be a collection of photographs of the world's great pictures, so that the student may become acquainted with them by sight as well as by name. Such a collection, arranged by schools, or by galleries, and correctly named, could not fail to awaken interest, if not enthusiasm, in those who might view them, and would be worth its cost in the cause of popular or individual art education."

A different method of combining library and museum has been adopted by the Salem public library.<sup>1</sup> "By way of increasing the educational value of the collection in the museum and of giving illustrations to readers of books in the public library, a system of reference cards has been adopted by the officers of the Peabody Academy of Sciences, giving the author's name, title, and call number of such books in the Salem public library as treat of the specimen or group of specimens on which the cards are placed. With our normal and high schools, and the proximity of numerous other schools and academies of higher grade in neighboring towns, it is of the utmost importance that these scientific and educational institutions should work in harmony in order to be of the greatest value to the public."

The Buffalo public library has arranged its beautiful building so as to lodge the natural history museum, the art gallery, and the Historical Society Museum under the same roof.

In 1883 the Province of Ontario passed an act authorizing the establishment, by board specially appointed, of free libraries, museums, and art galleries, but while free libraries have been formed, none have availed themselves of the full power of the act.

Finally, the State of New York has, in amending and consolidating its university law, inserted a clause which should afford a model to every State in the Union:

SEC. 35. All provisions of sections thirty-five to forty-one shall apply equally to libraries, museums, and to combined libraries and museums; and the word "library" shall be construed to include reference and circulating libraries and reading rooms. (*Laws of New York, 1892, ch. 378, approved April 27, 1892.*)

It is evident, therefore, that we are drifting in the direction of combined libraries, museums or art galleries, or both, and that the combination is gradually approving itself for its educational and refining influences. The economy with which they can be carried on under the present organization is patent from the example of similar institutions in the United Kingdom. Our aim should be, not to rush into the formation of large specialized museums or expensive art galleries, but quietly to work them up as necessary parts of the library, and if carried on in this manner the annual expense will form a very small portion of the grant, and will, on the other hand, lead to greater liberality on the part of the authorities.

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<sup>1</sup> Library Journal, October, 1890.



*Hints for management.*—Do not be afraid to start with a small collection. It will soon grow. Get the reporters to write up in the local papers the donations as they arrive, and make it generally known that you want specimens. You will speedily have plenty offered, if you will undertake to supply cases. Some of the best museums in the United States do not buy anything. Reserve always the right to exclude what is useless or at least valueless for your purposes. Set out with a definite idea of what form you intend your museum to take and it will be comparatively easy to mold it. In some localities you can enlist the services of members of the natural history, the historical, or art societies in the work who will relieve the librarian from much difficulty in making a beginning. Place your collections of specimens or pictures in a spare room or rooms well lighted and arranged for extension. Every new library building should be planned to afford ample accommodation of the best kind. Never permit, even temporarily, any cases or pictures to be left in the library proper, as a doorway would be opened at once to talking and disorder which it will be difficult to correct. Above all a special assistant with some knowledge of the natural sciences must be appointed, with complete charge under the general guidance of the librarian, who must be left free to attend to his regular work. It is not a difficult matter to obtain the services of a young lady with college training, with a real love for the work, who could take charge, do the labeling, enter all arrivals in the accession book, and be able to give as much information to visitors as is requisite in most small museums. As it need not be open more than six or eight hours a day, not more than one is required.

The connection with the books must be closely maintained, not only by giving references to special books, but by exhibiting side by side the special illustrations referring to them, or by erecting in close proximity small shelves on which can be placed the most convenient manuals. As for example, Le Conte's Geology, Nicholson's Palaeontology, Dana's Mineralogy, Gray's Botany, Packard's Entomology, Nuttall's Ornithology, Abbott's Primitive Industry. The label on each specimen should be very clear and distinct, giving the scientific and common name, the locality whence it came, and the name and address of the donor. As each library should be the repository of the local printed matter, so each museum should aim first at having a thorough representation of the natural physical characteristics and fauna and flora of the surrounding district, so that the stranger will be able, almost at a glance, to see the leading features of the country, and the young thus accustomed to observe their own, will be better able to examine intelligently collections of other and larger cities and more comprehensive institutions. Much may be done by a large relief model of the surrounding country or by geological sections painted on the wall. In manufacturing cities, specimens of raw materials under all stages of manufacture are of great interest, and, when supplemented by like

specimens from abroad, form a technological museum of a highly valuable character.

If free lectures can be arranged, having for their subject the contents of any of the cases or of books bearing on them, a wider interest is roused in both library and museum. Let your lecturers be men, however humble, who understand their special work, not mere general talkers. If, in addition, occasional open nights can be arranged, when some special attraction is announced, many will be induced to enter and remain in the building who in ordinary course would misspend their time elsewhere. Collections of art workmanship and pictures are very attractive, and loan exhibitions can almost always be provided at least once a year. Valuable paintings are becoming more numerous in the homes of our wealthy citizens, and, except in rare cases, can be readily borrowed for public exhibition. Temporary exchanges with other libraries and art galleries of special pictures could be effected, and a brief newspaper notice that a new object of art or picture could be seen at the public library would stimulate regularly the public attention. Following the example of other institutions, a small charge might be made to defray extra expenses. As pointed out by Professor Frieze, casts of almost all the famous statues can be obtained at small cost, and would familiarize the mind of youth with the glories of ancient art.

Finally, the librarian must never forget that the museum is neither a storehouse nor a bazaar, but an additional means of extending and popularizing knowledge; therefore his collections are worthless unless systematically arranged and his pictures properly described, and that at all times the rooms must be kept bright, attractive, and comfortable. The curators of the United States National Museum, Washington, and of the Cincinnati Art Museum have devised model cases, about which they readily give all information.

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#### CLASSIFICATION.

By HORACE KEPHART, Librarian, St. Louis Mercantile Library.

This paper is limited to arrangement of books on the shelves.

There is an essential difference between catalog and shelf arrangement, inasmuch as a title may be duplicated in a catalog, whereas the book itself can stand in but one place at a time. A subtler judgment must therefore be exercised in shelving books than in making a subject catalog, and expediency must sometimes rule, instead of strict logical principles; hence it is not surprising that the matter of classification on the shelves has not passed beyond the stage of controversy.

I originally intended to discuss some underlying principles of classification, hoping that we might discover room for further cooperation without pushing uniformity too far. It seemed to me that if it were shown that the admitted faults of our more popular systems were not necessary evils, we would have advanced somewhat toward a solution of the problem. Indeed, I even went so far as to write a critical examination of the field. But the essay grew forbidding by mere bulk, and an attempt to condense only resulted in obscurity. Consequently, the present chapter is limited to methods now pursued in our larger libraries, and to the views of their librarians on a few fundamental problems which beset the classifier.

Such a conspectus should have more than statistical value, since the literature of classification which has appeared in this country within the past twenty years, though extensive, is the work of but a few men, and does not show the conclusions of American librarians as a class.

I regret that space forbids my including a similar showing of the various methods employed by our foreign colleagues. Such an addition might go towards correcting the tendency to a fatuous provincialism which is not unknown among us. In default of anything better, I append a reference list, which includes foreign as well as native works relating to classification.

Early in 1893 I sent the following circular of inquiry to the head of every library in the United States which, so far as I could learn, contained 25,000 volumes and upwards. Undoubtedly many smaller institutions might have been heard from with profit, but this line was



chosen as roughly indicating the point beyond which the merits and demerits of classification systems are likely to be felt:

## CIRCULAR.

- 1 How many volumes are there in your library?
- 2 Do you use the Cutter, Dewey, Edmands, Fletcher, Harvard,<sup>1</sup> Larned,<sup>1</sup> Perkins, Schwartz, or Smith classification?<sup>1</sup>
- 3 If so, do you modify it, and how? What changes in it would you suggest if it were to be made over again?
- 4 If you use neither of the above, please give an outline of the main divisions of your shelf-classification, with class marks, and examples of your usage in numbering books. If a synopsis has been printed, a copy of it will suffice.
- 5 How long has the present system been used in your library?
- 6 If you were to classify your books anew, what method would you adopt?
- 7 Do you favor "close" classification (closer, for example, than the first three figures of the Dewey, or first two letters of the Cutter system)?
- 8 Do you think that the mnemonic element in such notations as the Cutter, Dewey, Schwartz, is worth what it costs?
- 9 Do you find by actual test that close-classification wastes space?

One hundred and eighty-three circulars were sent out, to which 130 replies were received. Three libraries reporting had less than 25,000 volumes, thus leaving 127 available returns. To print these reports in full would take too much space, but the gist of them is given in the annexed table and abstracts.

For the benefit of beginners it may be well to define a few of the technical terms here used.

When we sort out a lot of things (minerals, plants, books—no matter what) so that similars are grouped together, and then arrange these groups into a system, that is a *classification*. When we assign a distinguishing mark to each number of such a system, that is a *notation*. Classification is a method of work; notation is a mere label to help us in handling the material. It is a mischievous error to confound the two.

In many libraries the notation has little or no reference to the scheme of classification, the books being numbered according to the shelves which they occupy. This, in library parlance, is called *fixed location*. In others, numbers refer to divisions in the classification, and this is known as *movable* or *relative location*. The difference between these methods is clearly shown by Mr. Cutter, as follows:

The former [fixed] may be compared to the line in the directory which states that a man lives at 129 Grace street; the latter [movable] to the Army Register, which says that he is captain of Company C, Fifth Regiment, M. V. The street is immovable but the regiment may be marched from one part of the country to another, yet the man is easily found by his position in it. Similarly books may be found by their position in a certain class, though the class itself be moved from one alcove to another. If the man moves to a new street a new directory is needed; but the Army Register does not have to be altered just because the regiment has been quartered in a different town. *L. j. 4: 236 [1879].*

<sup>1</sup> Mr. Larned writes me that "The Larned classification was never completed, and was never intended to be anything more than a suggestion." The Harvard system has not been printed in full. See Reference List at end of this article.

The terms *close classification* and *broad or loose classification* can not be defined with any exactness. In general, advocates of broad classification would have, at most, only a few hundred subject divisions for a miscellaneous library, while the close classifiers often use several thousand. In Schleiermacher's *Bibliographisches system* (1852) there are 13,016 headings, and the later classifications of Dewey, Hartwig, and Cutter are likewise very minutely subdivided. The extremes may be illustrated, on the one hand, by the story of the theological library (probably mythical) in which the books were disposed on two sides of the room, according as they were "sound" or "unsound;" and on the other hand, by the rubric 267.34145 in the Dewey classification, which, being interpreted, seems to mean, "In Young Men's Christian Associations, have the general secretary and his assistants, as salaried officers, a right to keep company with ladies."

## Synopsis of returns from 127 libraries of 25,000 volumes and upward, 1893.

Number of volumes.	Name and place.	System of classification used.	How long used.	System preferred.	Favor close classification?	Favor mnemonic notations?	Does close classification waste space?
665, 000	Library of Congress, Washington, D. C.	Movable; broad	Yes, 32	Same, expanded	Not ordinarily desirable.	No	Yes.
576, 237 <sup>1</sup>	Boston public, Boston, Mass.	Shurtleff's decimal; fixed; broad.	35	Has not been considered.	No experience	No experience	No experience.
407, 989 <sup>2</sup>	Harvard University, Cambridge, Mass.	Harvard; fixed; close	16	Should keep master of any system.	Yes; depends upon the subject.	If not slavishly followed.	Not enough to lament it.
280, 000 <sup>3</sup>	University of Chicago, Chicago, Ill.	Dewey, slightly modified. Cutter author numbers.	2	Same	Yes; use 6 figures	Yes; decidedly	No.
245, 389 <sup>4</sup>	Astor, New York, N. Y.	Fixed; broad.	39	Same, modified as needed.	No	No	Yes.
241, 017	New York mercantile, New York, N. Y.	Movable; alphabetical; no subject classification.	73	Has worked well; too expensive to change.	Yes.	No	Not yet tried.
215, 500 <sup>4</sup>	Yale University, New Haven, Conn.	Movable; close	(6)	Developing one, probably fixed, based upon that of Halle.	As close as convenient.	No	No
200, 000	Sutro, San Francisco, Cal.	Fixed; based upon that of Halle.	(6)			No	No
188, 478	Chicago public, Chicago, Ill.	Peole; movable; broad	19	Probably Dewey.	No	No	No experience.
177, 777 <sup>4</sup>	Cincinnati public, Cincinnati, Ohio.	Fixed; see report.	20	Not prepared to answer.	No	Yes	No
171, 000	Library Company of Philadelphia, Philadelphia, Pa.	Smith	15		No	No experience	No
170, 000	Boston Athenaeum, Boston, Mass.	Cutter's Athenaeum	13	Same	Yes	Yes	No.
169, 715	New York State, Albany, N. Y.	Dewey, not modified	4	Same; subdivided	Moderately close	Yes	Requires more space.
169, 000	Philadelphia mercantile, Philadelphia, Pa.	Edmands	12	By departments of instruction.	Yes; depends	No	No.
160, 000	Columbia College, New York City	Dewey, partially	10	Probably same.	Not very close	No	Not tested
133, 000 <sup>7</sup>	Cornell University, Ithaca, N. Y.	Similar to that of the British Museum.	4			No	No
126, 343	Enoch Pratt, Baltimore, Md.	Movable; broad; based upon Peole's Chicago public.	7	More expandable system.	No	No	No
118, 000	Brooklyn, Brooklyn, N. Y.	Mixed	24	Same	No (?)	Not tested	No.
118, 000	Detroit public, Detroit, Mich.	Dewey, slightly modified	7	do	Yes	Yes	Not the slightest.
116, 000	Peabody Institute, Baltimore, Md.	Fixed; broad	32	do	No straight-jacket.	No	No
115, 000	Newberry, Chicago, Ill.	Peole; movable; expands and subdivides as needed.	5	do	A useless fad.	No	No
110, 000 <sup>8</sup>	University of Pennsylvania, Philadelphia, Pa.	Dewey, much modified	6	Same, with still larger modifications.	In some classes.	Yes	No inconvenience.
108, 000 <sup>9</sup>	United States Surgeon-General's, Washington, D. C.	Movable; broad	15	80 classes, subarranged by authors.	No	No	Not tried.
98, 000	Pennsylvania State, Harrisburg, Pa.			A modified Dewey system.			
95, 000	General Society of Mechanics and Tradesmen, New York, N. Y.	Schwartz	21	See report	No	Schwartz's costs nothing.	Wastes time.



			1	Same	No.	Yes.	Yes.
94, 000 <sup>10</sup>	Georgetown University, Washington, D. C.	Dewey, modified.	8	do.	No (?)	Yes.	Yes.
92, 000	Lehigh University, So. Bethlehem, Pa.	Dewey in reference department; circulation department not classified.	(1) 7	Cutter or Dewey	Yes.	Yes.	Yes.
91, 000	Worcester free public, Worcester, Mass.	Cutter, partially; fixed location.					
+90, 000	American Antiquarian Society, Worcester, Mass.	Movable; close in some departments.	2			No.	No.
90, 000	California State, Sacramento, Cal.	Movable; close	(6) 23	Same, revised and closer.	Yes	No (?)	Not tried.
90, 000	College of New Jersey, Princeton, N. J.	W. T. Harris, expanded			Yes	No.	No.
90, 000	St. Louis public, St. Louis, Mo.	Cutter's sixth and seventh, modified.	(6)	Same, modified notations.	Yes	No.	No.
84, 172	St. Louis mercantile, St. Louis, Mo.	Fixed; close.	10	A movable system.	Yes; generally	No experience.	A little.
82, 347 <sup>12</sup>	University of Michigan, Ann Arbor, Mich.	Movable; close; no notation.		Will adopt the best.			
+80, 000	Wisconsin State Historical Society, Madison, Wis.	Cutter, somewhat modified.	(4) 13	Same	Sometimes.	Doubtful	
80, 000	Brown University, Providence, R. I.	Dewey, somewhat modified.	8	Broad; relative.	No.	No.	Yes.
80, 000	San Francisco public, San Francisco, Cal.	Dewey, modified in detail.	6	Dewey, less modified.	Yes; it pays.	Yes.	No.
75, 000	Dartmouth College, Hanover, N. H.	Library made up almost wholly of Government documents, arranged by Congresses, etc.	15	An eclectic one.	Yes; depends.	Yes; within limits.	Not ultimately.
72, 000	Cleveland public, Cleveland, Ohio	Fixed; broad	13	Same	No experience	No opinion	No experience.
70, 000	Buffalo, Buffalo, N. Y.	Fixed; broad					
70, 000	United States Senate, Washington, D. C.	Fixed; broad					
68, 633	Union Theological Seminary, New York, N. Y.	Dewey, modified	16	Same as San Francisco Theological Seminary.	A delusion and a snare.	No faith in it.	Yes.
67, 000	Milwaukee public, Milwaukee, Wis.	Dewey, slightly modified	14	Hesitates.	Yes; decidedly	Not worth much sacrifice.	No.
66, 878 <sup>1</sup>	New York free circulating, New York, N. Y.	Dewey, modified	13	Same	Yes; where needed.	Yes.	No.
65, 000	San Francisco mercantile, San Francisco, Cal.	Dewey; Cutter and author numbers.	2	Satisfied	do.	Questionable	Unobjectionable.
64, 400	Minneapolis public, Minneapolis, Minn.	Edmunds reduced; author table of 1,000.	4	Cutter, or Edmunds expanded.	Yes; Cutter's seventh note too close.	Scarcely	No.
62, 776	Providence public, Providence, R. I.	Movable; close; decimal.	15	Dewey	Yes	Yes	By no means.
+60, 000	Essex Institute, Salem, Mass.	Dewey, modified					
60, 000	Amherst College, Amherst, Mass.	Dewey, much modified, this regarding decimal plan.	19	Fletcher	Yes	No (?)	No.
60, 000	Young Men's mercantile, Cincinnati, Ohio.	Movable; broad	58	Same			

<sup>12</sup> And 14,868 pamphlets.  
<sup>13</sup> And 80,000 pamphlets.

<sup>9</sup> And 150,000 pamphlets.  
<sup>10</sup> And 57,000 pamphlets.  
<sup>11</sup> 7 months.

<sup>5</sup> Applying it.  
<sup>2</sup> And 24,515 pamphlets.  
<sup>7</sup> Including law.  
<sup>8</sup> And 110,000 pamphlets, etc.

<sup>1</sup> Including branches.  
<sup>2</sup> And 310,000 pamphlets.  
<sup>3</sup> Including pamphlets, (f)  
<sup>4</sup> Not including pamphlets.

## Synopsis of returns from 127 libraries of 25,000 volumes and upward, 1892-Continued.

Number of vol- umes.	Name and place.	System of classification used.	How long used.	System preferred.	Favor close classi- fication?	Favor mnemonic notations?	Does close classi- fication waste space?
60,000	New Bedford public, New Bedford, Mass.	Dewey; Cutter author table in fiction.	178.	.....	Yes.	Can do no harm.	.....
55,000	Hartford Theological Seminary, Hart- ford, Conn.	Movable; close; Cutter au- thor-table and local list.	1	Same, slightly modi- fied.	Depends.	No.	Not tested.
55,000	Indianapolis public, Indianapolis, Ind.	Movable; close (t).	29	Undecided.	.....	.....	No.
54,697 <sup>2</sup>	Princeton Theological Seminary, Princeton, N. J.	do.	16	Satisfied.	Yes.	.....	No.
54,000 <sup>3</sup>	University of Virginia, University Post-Office, Va.	Fixed; broad.	68	Same.	No experience.	No.	No experience.
52,000	Haverhill public, Haverhill, Mass.	Shurcliff's decimal (t).	19	Cutter (t).	.....	.....	.....
52,000	Minnesota Historical Society, St. Paul, Minn.	Fixed (t); broad.	23	Cutter.	No experience.	No experience.	No experience.
52,000	University of California, Berkeley, Cal.	Movable; close.	(t)	.....	Yes.	No.	No.
50,800	Bowdoin College, Brunswick, Me.	Dewey, somewhat modified.	6	Probably Cutter, with another notation.	Yes.	No.	No waste.
50,000	American Philosophical Society, Phila- delphia, Pa.	Movable; close.	30	Edmunds.	No.	No.	.....
50,000	Lowell city, Lowell, Mass.	Dewey, slightly modified.	10	Same.	No.	.....	Yes.
50,000	Trinity College, Hartford, Conn.	do.	(t)	Same, more modified.	Depends.	No.	Yes.
+49,000	Andover Theological Seminary, And- over, Mass.	Fixed (t); broad.	26	Same.	No.	No experience.	.....
48,000	New York State law, Albany, N. Y.	Broad; no book numbers.	76	Same.	Not very close.	No.	Not thoroughly tested.
47,000	Lynn public, Lynn, Mass.	Movable; close (t).	15	Same, or Cutter (t).	Not very close.	No.	.....
45,250	University of Vermont, Burlington, Vt.	Dewey, somewhat modified.	6	Probably same.	In a few cases.	Yes.	.....
45,000	Illinois State, Springfield, Ill.	Broad.	.....	.....	No.	No.	No (t).
45,000	Omaha public, Omaha, Neb.	Same as Indianapolis public.	5	Probably Cutter.	No.	No experience.	No.
45,000	Pooria public, Peoria, Ill.	W. T. Harris, elaborated.	20	Satisfied.	Yes.	.....	.....
44,523	Town State, Des Moines, Iowa.	Parkins.	10	Dewey.	Yes.	.....	No.
43,300	Wellesley College, Wellesley, Mass.	Dewey.	10	do.	Yes.	No.	Yes; but worth it.
43,000	Sage Library, Theological Seminary, New Brunswick, N. J.	"Theological"; movable; close.	15	.....	.....	.....	.....
42,000	Maine State, Augusta, Me.	Dewey, modified.	2	A modification of Dewey.	Yes.	To a limited ex- tent only.	Yes; when very close.
42,000 <sup>6</sup>	Syracuse University, Syracuse, N. Y.	Fixed; broad.	4	A relative one.	No.	No.	Not necessarily.
41,000	New York Y. M. C. A., New York, N. Y.	Dewey; Cutter author, and size notation.	10	Same, or Brooklyn.	Yes; depends.	Yes.	Not tested.
40,973 <sup>7</sup>	New York Bar Association, New York, N. Y.	Movable; broad.	23	.....	.....	.....	.....
40,000	Philadelphia Athenaeum, Philadelphia Pa.	Fixed; broad.	79	Same.	.....	.....	.....
40,000	Pratt Institute, Brooklyn, N. Y.	Dewey.	5	.....do.	Only in large libraries.	Yes.	Not tested.

				(4)	do do do Cutter or Dewey	Yes Depends Yes; depends No	Yes; as to authors No Yes Doubtful	No experience No Yes
40, 000	Wesleyan University, Middletown, Conn.	Cutter's seventh						
40, 000	Woodstock College, Woodstock, Md.	Fixed; broad (?)		24	do		No	No experience.
38, 979	Newark public, Newark, N. J.	Dewey.		4	do		Yes	No.
38, 000	Cambridge public, Cambridge, Mass.	Cutter classification; Boston public notation, made movable.		13	Cutter or Dewey		Doubtful	Yes.
38, 000 <sup>8</sup>	Franklin Institute, Philadelphia, Pa.	Fixed; broad		18	Dewey; Cutter author numbers.	Yes; as closely as possible.	No experience	Not much.
38, 000	Hartford public, Hartford, Conn.	Dewey, modified		1	Same, more modified.	Yes.		No.
38, 000 <sup>9</sup>	Oberlin College, Oberlin, Ohio	do		8	do	Sometimes	In general, yes.	More room.
37, 600	Portland public, Portland, Me.	Fixed; broad		16	Undecided			
37, 000	Newton public, Newton, Mass.	do		23	Satisfied			
36, 500	Massachusetts Historical Society, Boston, Mass.			20				
36, 300	Redwood, Newport, R. I.	Cutter's Athenaeum; slightly modified.		4	Cutter's sixth	Yes; depends	By no means	Somewhat.
36, 087	Taunton public, Taunton, Mass.	No definite shelf classification.			Combined Dewey and Perkins.			
36, 062 <sup>10</sup>	United States Military Academy, West Point, N. Y.	Fixed; broad		40	Same	No experience		
35, 913	Manchester city, Manchester, N. H.	Numbered consecutively; no class marks.		3	Cutter	No		
35, 000	Hamilton College, Clinton, N. Y.	Dewey, slightly modified.		5	Same	No	No	No.
35, 000	Philadelphia Academy of Natural Sciences, Philadelphia, Pa.	Fixed; broad		47	Probably Dewey, modified.	No	No	No experience.
34, 232	Bangor public, Bangor, Me.	Dewey; Cutter author numbers.		6	Same	Yes		No.
34, 171	Jersey City public, Jersey City, N. J.	do		2	do	Yes	Yes	Somewhat.
33, 776	Teabody Institute, Peabody, Mass.	Cutter		22	Something simpler (?)			
33, 469	Toledo public, Toledo, Ohio	Dewey, modified		11	Simplified Dewey	Seldom		
33, 429	Lawrence public, Lawrence, Mass.	Movable; broad		21	Modified Dewey	No	No	No experience.
33, 000	United States Naval Academy, Annapolis, Md.	do		24	One with more than 10 classes.	No		
32, 469	Dayton public, Dayton, Ohio	Movable; broad		13	Same, but very close.	Yes	No	Yes.
32, 000 <sup>11</sup>	Kansas State, Topeka, Kans.	Smith, with additions.		7	Dewey	Yes	No experience	Not wasted.
32, 000 <sup>12</sup>	San Francisco law, San Francisco, Cal.	Fixed (?) ; broad		20	Satisfied		No	Sometimes.
31, 000	Woburn public, Woburn, Mass.	Dewey		14	Same	Reasonably close.	No	Undecided.
30, 533	Boston Library Society, Boston, Mass.			(13)	Dewey			
30, 000 <sup>14</sup>	Iowa State University, Iowa City, Iowa.	Dewey, slightly modified, for main library.		7	Same	No positive opinion		
30, 000 <sup>15</sup>	Nebraska State, Lincoln, Nebr.	Perkins, modified.			Studying the matter.			
30, 000	St. Louis University, St. Louis, Mo.	Dewey			Probably an independent one.	No		Yes.
30, 000	Troy Young Men's Association, Troy, N. Y.	Fixed; broad		8	Same	No	No	No experience.
30, 000	University of Minnesota, Minneapolis, Minn.	By departments of instruction.			Undecided.	No	No (?)	

<sup>13</sup> Unknown.<sup>14</sup> Including law and medicine.<sup>15</sup> Largely law.<sup>9</sup> And 25,000 pamphlets.<sup>10</sup> And 5,328 pamphlets.<sup>11</sup> Two-thirds law, one third miscellaneous.<sup>12</sup> All law.<sup>6</sup> A few years.<sup>7</sup> And 10,000 pamphlets.<sup>8</sup> All legal.<sup>9</sup> And 22,000 pamphlets.<sup>1</sup> Begun.<sup>2</sup> And 23,005 pamphlets.<sup>3</sup> Including pamphlets.<sup>4</sup> Applying it.



## Synopsis of returns from 127 libraries of 25,000 volumes and upward, 1893—Continued.

Num- ber of vol- umes.	Name and place.	System of classification used.	How long used.	System preferred.	Favor close classi- fication?	Favor mnemonic notations?	Does close classi- fication waste space?
30,000	University of the South, Sewanee, Tenn.	Dewey, slightly modified; Cutler author numbers.	Yrs. 2	Same	No	By all means.	No.
29,389	Los Angeles public, Los Angeles, Cal.	Dewey, somewhat modified.	4	.....do	Yes; very close.	Yes	Not at all.
29,341	Newburyport public, Newburyport, Mass.	Fixed; broad	38	Perhaps Dewey, mod- ified.	No	By no means.	No experience.
29,000	Haverford College, Haverford, Pa.	.....do	30	Probably Perkins, modified.	No		
29,000 <sup>1</sup>	University of Wisconsin, Madison, Wis.	Movable; broad; no nota- tion.	.....	Dewey or Cutler, mod- ified.	Yes; closest possible.	Yes	Inconsiderable.
28,811 <sup>2</sup>	Massachusetts Institute of Technology, Boston, Mass.	Dewey, modified.	7	Same	Yes	No	No.
28,000	Colby University, Waterville, Me.	Dewey partially; no author arrangement.	3	Probably Dewey	Depends	No opinion	Yes.
+27,500	University of Rochester, Rochester, N. Y.	Dewey	(3)	Some other one (?)	No		To a very limited extent.
27,237	College of the City of New York, New York, N. Y.	See report	19	Undecided.			No experience.
27,047 <sup>4</sup>	Kansas State Historical Society, To- peka, Kans.	Dewey	8	Satisfied			
27,088 <sup>5</sup>	Northwestern University, Evanston, Ill.	Library in a transition state; no policy decided upon.	.....				
27,000	Salem public, Salem, Mass.	Dewey	4	Cutler's sixth	Seldom	No	No.
26,878 <sup>6</sup>	Rochester Theological Seminary, Roch- ester, N. Y.	Fixed; broad	15	Same		No	
25,000	Northampton public, Northampton, Mass.	Broad	20	Undecided			
25,000	Fletcher free, Burlington, Vt.	.....do	20		Not for small library.		
25,000	North Carolina State, Raleigh, N. C.	Neither of the printed schemes.					
Over 25,000?	South Carolina State, Columbia, S. C.	By States; then chronolog- ically.					

<sup>1</sup> Not including pamphlets.  
<sup>2</sup> And 14,000 pamphlets.<sup>3</sup> Applying it.<sup>4</sup> And 43,271 pamphlets.<sup>5</sup> And 18,000 pamphlets.<sup>6</sup> Theological only.<sup>7</sup> Public documents only.

No replies were received from the following libraries:

Baneroft Pacific.	Massachusetts State.	St. Paul Public.
Baptist Union Theological Seminary.	Michigan State.	San Francisco Mechanics' Institute.
Boston Society of Natural History.	Mississippi State.	San Francisco Odd Fellows'.
Brookline Public.	New Jersey State.	Silas Bronson (Waterbury).
Connecticut Historical Society.	New York Academy of Medicine.	South Carolina College.
Congregational (Boston).	New York Historical Society.	Springfield City.
Cooper Union.	New York Law Institute.	Tennessee State.
Fall River Public.	New York Society.	Tulane University.
Georgia State.	Pennsylvania Historical Society.	United States House of Representatives.
German Society of Pennsylvania (Philadelphia).	People's (Newport).	United States Patent Office.
Grosvenor (Buffalo).	Philadelphia College of Physicians.	United States State Department.
Hobart College.	Philadelphia Mutual Library Company.	University of Notre Dame.
Johns Hopkins University.	Polytechnic Society of Kentucky.	Virginia State.
Kentucky State.	Providence Athenæum.	Wabash College.
Lenox.	Rutgers College.	Watkinson Reference (Hartford).
Long Island Historical Society.	St. Mary's Theological Seminary.	Western Theological Seminary.
Louisiana State.		Williams College.
Maimonides (New York).		
Maryland State.		

#### ABSTRACTS OF REPORTS.

**Library of Congress.**—Adjustable or eclectic system; *e. g.*: Political economy is numbered 25, Government is 25.7, and the label of a book on government might read  $\frac{25.7}{5352}$ , the denominator being the shelf mark. Under each subject books are arranged alphabetically by authors' names, as far as possible, individual biography in six great classes, alphabeted by subjects; collective biography, fiction, poetry, polygraphy, etc., by authors. Would prefer a more thorough subdivision of the great classes of subjects, and an extension of alphabetic arrangement by authors. (Ainsworth R. Spofford, *Lib'n.*)

**Boston Public.**—Books arranged on two sides and ends of a large hall, three floors. Space on each side of hall divided into 10 alcoves of 10 ranges each. Movable shelves, numbered from bottom, 0, 1, 2, 3, etc., up to 9 (or 9 *a* if room for supplementary shelf). Alcoves numbered 21, 22, etc., along one side of room and then back along the other to 40; then 41 is the alcove above 21 and so round on the second floor, while the third floor begins with 61 above 41, and so on. Hence, regular sequence of alcoves, both perpendicularly and horizontally. To designate the shelf four figures are used, thus: in 2675 the figures 26 stand for alcove, 7 for range, and 5 for shelf. To this shelf number is affixed the number of the book (work, not volume) on the shelf, 3852.17 being the seventeenth book on second shelf of fifth range of alcove 38. A volume in a set is indicated by adding its number (date, if a serial) to book number, thus 7537.10.2 or \*3115.1 (1877). Books marked \* can

only be taken out of building by permission of officer in charge; \*\* can not circulate; \*\*\* permission of trustees required. System devised by the late Nathaniel B. Shurtleff [see Reference list at end of this chapter], and details carried out by the late Prof. C : C. Jewett. One or more alcoves are assigned to each of eighteen grand divisions of subjects, and in each alcove ranges are assigned to certain subdivisions. Public denied access to shelves. Dictionary catalog has no relation to shelf classification. The idea of reclassifying has never been entertained for a moment, so no examination of other systems has ever been made. (Theodore F. Dwight, *Lib'n.*)

**Harvard University.**—About one-third of the books are classified, filling the present stack; when new stack is finished the rest will be classified. Many subjects are taken out of the general classification, when well rounded as collections, and form independent groups, *e. g.*, classics, angling literature, Dante, etc. (Justin Winsor, *Lib'n.*)

**University of Chicago.**—Began to apply Dewey system two years ago. Delighted with it. Modifies biography only. (Zella Allen Dixon, *Ass't Lib'n.*)

**Astor.**—In 1854 Dr. Cogswell adopted Brunet's system with five main divisions; subsequently the main divisions were reduced to four: Literature and art (six subdivisions), history (six subdivisions), science (seven subdivisions), philosophy (seven subdivisions). Subdivisions can not be absolute, but depend much on practical convenience and free growth of different branches of learning. (Frederick Saunders, *Lib'n.*)

**New York Mercantile.**—"Standard literature" is arranged on the shelves alphabetically by authors' names. Different works by same author are alphabetized under his name by titles. Fiction is separated from standard books and alphabetized by titles regardless of author. No shelf marks nor class numbers. Only number used is accession number, stamped on title-page. Thus far the system has worked very well. Has its drawbacks, as all others have, but knowing the vast labor and expense of reclassifying, little thought has been given to new methods. It costs less than some others, and books can be distributed more quickly by it. (W. T. Peoples, *Lib'n.*)

**Yale University.**—Applying a new classification. Main classes marked by letters, and smaller divisions by figures; *e. g.*, history (other than American) is B, Italian history is Bm, periods and local divisions of Italian history are Bm 1 to Bm 99. Sometimes a third letter is added for rough alphabetizing, thus: Be, American genealogy (collective); Beb, American families beginning with B. (Genealogy is treated as one of the prolegomena in B, and as American genealogy can not well be separated from English, it comes in B instead of with American history in C.) Has found Hartwig's Halle *Schema* most helpful, but departs widely from it. Cutter notation too complicated. (Addison Van Name, *Lib'n.*)

**Sutro.**—Books unclassified. Will probably be shelved on fixed location principle, under a classification based on the Halle *Schema*, with



some modifications from the Perkins classification. Eleven main classes. Details of class marks, book numbers, etc., not yet fixed. Every growing library needs abundance of empty shelving. (Geo. Moss, *Act'g Lib'n.*)

**Chicago Public.**—System devised by Dr. Wm. F. Poole. [See References.] Nineteen main classes; example of book-label  $\frac{B}{1} \frac{3623}{1}, \frac{G}{1} \frac{163f}{1}$ . (Fred. H. Hild, *Lib'n.*)

**Cincinnati Public.**—[Scheme printed in 1879. See References.] Library crowded, and embarrassed by fixed location on shelves. If any change were made, would probably use Dewey. (A. W. Whelpley, *Lib'n.*)

**Library Co. of Philadelphia.**—If any changes were made, would be mere matters of detail, not of principle involved in the Smith system. (Geo. Maurice Abbot, *Asst. Lib'n.*)

**Boston Athenæum.**—Law and medicine still unclassified. Close classification favored, at least for books much used at shelves. Mnemonic notation "does not cost much in our case, and is rather convenient." (Wm. C. Lane, *Lib'n.*)

**New York State.**—Would modify Dewey system by transposing classes 4 and 9, so as to bring sociology and history, philology and literature, together. "We should also make some minor changes if it were possible to start anew; but it is clearly vastly better to use as now than to sacrifice the great gain that comes from using a system in common with several hundred libraries." (Melvil Dewey, *Director.*)

**Philadelphia Mercantile.**—Would make no change in the Edmands, if it were to be made over again, except to subdivide further. Decimal system is artificial and unnatural. Dewey and Cutter notations are wasteful and too complicated. (John Edmands, *Lib'n.*)

**Columbia College.**—Modified Dewey classification used in larger part of library, but some sections have classifications better suited to their character. Biography in one alphabet, literatures of individual peoples sometimes in one alphabet, sometimes in 3 or 4 period subdivisions. Many classes in later editions of Dewey are not used. If starting in to apply it, or make it over again, would use a much more limited number of classes. If classifying this library anew would group as far as possible by departments of instruction. Would discard any classification based on ideal or subjective grouping of all human knowledge, but would arrange books as the various departments of the university found it desirable to use them. Favor close classification as far as clearly defined, unmistakable, and generally recognized classes of books can be created. Do not think any library justified in any great extra expense in classification. Any attempt in a large library to make classification a substitute for the catalog as an index to the contents of the library must be unsuccessful. On the other hand, books which are like each other and unlike other books may as well be kept together. Mnemonic notation in a large library is of very little importance; is of no account to the reader. In reality

the Dewey notation has no mnemonic elements. Uniformity of country subdivisions and notation is useful. In a library that is not growing, close classification requires somewhat more space than broad. In a library rapidly growing, space should be left as generally dispersed as possible. No material waste is caused by closed classification. (Geo. H. Baker, *Lib'n.*)

**Cornell University.**—System similar to that of the British Museum [see Reference list]. Numbers 1-10,000 taken, each number representing a press, or, if need be, a vertical section including two or more presses. Each shelf denoted by a letter. Numbers (presses) assigned as follows: 1-100, reading room; 101-1000, philology, oriental and classical literature; 1001-3000, modern literature; 3001-6000, history; 6001-7000, social and political science; 7001-7400, philosophy; 7401-7700, religion; 7701-8000 fine arts and architecture; 8001-8325, industrial arts and engineering; 8326-9050, general and physical science, and geology; 9051-10000, natural history, agriculture, and medicine. [The law library is in another building, and has a classification of its own.] In practice large gaps are left in numbering, e. g., press 3476 is now followed by press 3491. So, on the shelves, 100 numbers are assigned to each shelf, and similar gaps are left in the shelf numbers. The form of the book number is 2967 D 19. At present Power's *Handy Book About Books*, 2978 A 20, is followed on the shelf by Rouveyre's *Connaissances Nécessaires*, etc., 2978 A 31-32. In the case of serials a number is given to a group, and each serial receives a letter, e. g., *Library Journal*, 2975 A. "The present method seems to work fairly well, and I know of no perfect system as yet evolved." Do not favor very close classification, but would be governed by circumstances in each case. (Geo. Wm. Harris, *Lib'n.*)

**Enoch Pratt.**—System based on Poole's Chicago public library, divided into 26 grand classes designated by letters. In each class the numbers from 1 to 10000 are assigned to subdivisions according to which the books are shelf-listed. The first 10,000 being filled, the numbers from 1000 to 20000 are in like manner subdivided, etc.; e. g., works in modern languages being E, German books are to E 1 to 5000 and E 15,000 to 30000; French books, E 5000 to 15000; Spanish books, E 30000 to 40000; Portuguese book, E 40000 to 41000; Italian books, E 50000 to 60000. Not an ideal system, but too much trouble to change. Prefer a more expansible one. (Bernard C. Steiner, *Lib'n.*)

**Brooklyn.**—Library divided into 44 main classes, numbered 1 to 83, some classes having two or three numbers, according to extent, as theology, 35-37. The 44 classes include about 400 subclasses. In other classes than fiction the shelf mark is made up of class number + shelf + range + book. Thus, 411.01 means 4 class No. (history), 1 first shelf, of range 1, 01 being first book on the shelf. The books on a given shelf are numbered from 01 to 99, leaving blank numbers for interpolations. In fiction each author has a number, with 5 or 10 spaces of five lines



each left between each author for new entries, giving room enough for all additions for next 20 or 30 years, and keeping the arrangement alphabetic. Local significance of shelf number is a great help in finding a book. Generally close classification is desirable, but not as a substitute for subject catalog. (W. A. Bardwell, *Lib'n.*)

**Detroit Public.**—Dewey modified in detail, but not in principle. Would not recommend these changes to others, nor any radical departure from Dewey system. Mnemonic feature of notation affords aid and symmetry; has yet to learn that it sacrifices anything that would be more helpful to the practical classifier under the system. (H. M. Utley, *Lib'n.*)

**Peabody Institute, Baltimore.**—System devised by Rev. John G. Morris and P. R. Uhler in 1861. Seven main classes subdivided as required. Not arranged by decimal system "or any other iron-clad method." Each volume marked for floor, alcove, case, and shelf, thus: 1345, meaning floor 1, alcove 3, case 4, shelf 5, of west side of hall. Books shelved on east side of room have similar marks, but with a *minus* sign prefixed. Cases in alcoves are numbered 1, 2, 3, etc., up to 0. Each subject extends from below upwards through the different floors or tiers. No change is contemplated or desired, other than minor ones to suit new conditions. (Philip R. Uhler, *Lib'n.*)

**Newberry.**—Poole method [see References]. Expands, subdivides, and makes new classes, as the library increases, but does not modify the system in any other respect. "It has always seemed to me that there was a natural way of classifying a library which is self-evident to a practical man who will do his own thinking. It is so simple that it hardly needs an explanation. New attendants, readers, and the public at large take in its meaning at once. I regard the time and ingenuity spent in devising artificial systems of classification and mnemonic notations as wasted energy, and I have long since ceased to give them any attention. I have never read 'the first three figures of the Dewey,' and do not care to; and do not know what 'the first two letters of the Cutter' are. I do not think the mnemonic element of any value, and will have none of it in mine. What I understand as 'close-classification' I regard as a useless *fad*, or something worse." (Wm. F. Poole, *Lib'n.*)

**University of Pennsylvania.**—Dewey, modified considerably. Religion and philosophy almost entirely changed. Discard the form of divisions in the various literatures, except American and English, and reject the period divisions in all. Also many minor changes in subdivisions in all classes. If beginning anew, would use the same, with still larger modifications of Dewey. (Gregory B. Keen, *Lib'n.*)

**U. S. Surgeon General's Office.**—Books alphabetized by authors, as far as possible, under each of a number of grand divisions, *e. g.*, anatomy, physiology, medicine, surgery, gynæcology and obstetrics, jurisprudence, ophthalmology, hygiene, etc. Journals and transactions alpha-



beted by countries. Pamphlets alphabetic in numbered boxes. Books numbered in one series. No access to shelves. *Index catalogue* takes place of classification thus far. If classifying anew would divide library into about 80 classes and arrange books alphabetically in each class. (John S. Billings, *Lib'n.*)

**Pennsylvania State.**—Would use a modified Dewey plan. Not wedded to any particular system. (Wm. H. Egle, *Lib'n.*)

**General Society of Mechanics and Tradesmen "Apprentices".**—If changing the present [Schwartz] system would arrange books according to following scheme of classes:

- 0 Fiction.
- 1 Biography.
- 2 History and geography.
- 3 Political and social science.
- 4 Philosophy and theology.
- 5 Natural science.
- 6 Useful and fine arts.
- 7 Language and literature.
- 8 Foreign literature (in other languages than English).
- 9 Polygraphy.

By beginning with fiction (class 0) one number is saved, as the 0 is not written but understood. Two hundred and fifty thousand separate works can be numbered by using only five symbols. Would divide these departments into 1,000 sections, and these would be so arranged that they would form an endless chain. It would then be immaterial where the classification began. Polygraphy would have as its last division juvenile literature, ending with juvenile fiction, thus connecting with class 0, fiction.

If making a new classification, would arrange under 1,000 sections in which the *subject* classes (Nos. 2, 3, 4, 5, 6, of above scheme) would have one section each, but the *form* classes (Nos. 0, 1, 7, 8, 9) would have not less than 10 nor more than 100 sections each (thus poetry would have 10 sections, biography and fiction 100 each, drama 10, essays 10). "The error that all the current schemes make is to multiply numbers in the most popular classes." Instead of an author-table to number individual books in the subject classes, would simply use the initial of the author, followed by 1, 2, 3, etc. But in the form classes the A, B, etc., would not stand for initial of author, but for a subdivision of one of the sections. Thus, if poetry has sections 570 to 579, then 571 might stand for authors whose initials are A and B, 578 for S and T, and 578 B for Shakspeare, 578 Y for Thomson, and so on. Close classification wastes numbers, and therefore wastes time of readers and librarians. (Jacob Schwartz, *Lib'n.*)

**Georgetown University.**—Modifies Dewey by dividing theology into dogma and moral. Where the Dewey decimal does not suffice, uses letters; *e. g.*, Algonquin lang. is marked 497.1, and the 107 dialects are marked 497.1 A, etc. "Dewey's system has proved to be so satisfactory that it has not occurred to us that any change in our present order is desirable." (J. F. X. Mulvaney, S. J., *Lib'n.*)

**Lehigh University.**—Dewey, modified by alphabetizing all individual biography in one series; no period divisions in literature; in United States local history and geography sectional subdivision stops with the States, all cities, towns, counties, etc., being alphabetized under State. (Wm. H. Chandler, *Director.*)

**Worcester Free Public.**—Dewey in reference library (48,600 volumes), no classification in circulating library (42,400 volumes). More books with four and five figures than with three. Do not care for closer classification than this. (Samuel S. Green, *Lib'n.*)

**American Antiquarian Society.**—Library classified by subjects in alcoves. Books alphabetized on shelves by subjects, by authors, or chronologically. (Edmund M. Barton, *Lib'n.*)

**California State.**—Recently reclassified on a scheme drawn up after careful examination of Dewey, Perkins, Fletcher, and personal inspection of several Eastern libraries. Works in general library grouped in 11 classes, subdivided to a degree determined by number of books in respective subdivisions. (W. D. Perkins, *Lib'n.*)

**College of New Jersey.**—Reclassifying the whole library, using, as far as possible, the main divisions of the old system and same sequence, but with a movable location. Will probably use a 4-figure class number, followed by a 2, 3, or 4 figure author number, with a third number for the book, thus: 3175.31.3. In this example the author number, 31, represents anything from Charles de Blois to Civerchio in a system which divides the biographic dictionary [Phillips'?] into about 9,000 parts and uses 2, 3, or 4 figures for author number according to size of class. English fiction, poetry, and some other classes have special letter marks, letters and numbers 1-99 being reserved for special libraries or things taken out of logical order. Believe in close classification, but think the later editions of Dewey carry it altogether too far for practical use, though some of the sections should be expanded. (Ernest C. Richardson, *Lib'n.*)

**St. Louis Public.**—W: T. Harris system, "on which the Dewey system is based," expanded [see References]. If classifying anew, would revise present system, working in some of the subdivisions of the Dewey. In general, should use mnemonics only so far as can be employed without straining and excessive artificiality. (Frederick M. Crunden, *Lib'n.*)

**St. Louis Mercantile.**—Applying Cutter's sixth, with additions from seventh as fast as it appears. Disregard Cutter notation in literature. Subdivide (and mark) English literature as follows:

- 1 Collected works.
- 2 Poetry.
- 3 Drama.
- 4 Oratory.
- 5 Essays.
- 6 Wit and humor.
- 7 Fiction.
- 8 Juveniles [not used].
- 9 Folk literature.

The principal modern literatures are marked with 2 figures, by adding one or other of the above figures to 1 for Italian, 2 for Spanish, 3 for Portuguese, 4 for French, 5 for Russian, 6 for Swedish, 7 for Danish-Norwegian, 8 for German, 9 for Dutch. Thus the mark for Italian poetry is 12, for German fiction it is 87, and so on. This is not confusing, as figures *alone* are not used in the Cutter notation, and it shortens marks for most-used books very materially. Letters (correspondence) go with biography, and so do criticisms of an author's works. Uses a classification of its own for law. United States Government documents are marked with 3 figures and 2 letters, thus: 422 H E = Forty-second Congress, second session, House Executive. If classifying anew, would use same scheme, still more modified as to notation; or an entirely new one if could spare the time to make it. Mnemonics responsible for most of the faults in Dewey, Cutter, and similar schemes. (Horace Kephart, *Lib'n.*)

**University of Michigan.**—Fixed location. "In our classification we bring together as closely as possible, on the shelves, matter on the same subject. \* \* \* I consult Dewey's, Edmands's, and Perkins's systems more frequently than others." No separate class of biography; lives of men distributed according to subject with which they were identified. If classifying anew would use a movable system. (Raymond C. Davis, *Lib'n.*)

**Wisconsin State Historical Society.**—Books have no shelf numbers, and consequently no definite classification. "We hope in the near future to be able to adopt and make use of the best system extant." (Isaac S. Bradley, *Lib'n.*)

**Brown University.**—Introducing Cutter. Modify wherever required by needs of a university library. Biographies placed with the subject they illustrate. Rhetoric with composition. (Harry L. Koopman, *Lib'n.*)

**San Francisco Public.**—See table. (John Vance Cheney, *Lib'n.*)

**Dartmouth College.**—Fixed location, using + to mark north side of room, and — for south side. If changing, would have a limited number of departments marked A, B, etc., subdivided by adding 1, 2, 3, etc., and an author mark similar to Cutter's. (M. D. Bisbee, *Lib'n.*)



**Cleveland Public.**—Dewey, modified by arranging biography (individual), poetry, essays, novels, and stories for the young alphabetically, and by redistributing numbers in some classes. If beginning anew, would retain the alphabetic arrangement, but would not vary from Dewey in any other way, the convenience of shorter numbers and desirable readjustments being more than counterbalanced by inconvenience of departing from the printed form. Carry the Dewey out to 6 or even 7 figures when necessary, and think it pays. (Wm. H. Brett, *Lib'n.*)

**Buffalo.**—Dewey, modified in detail but not in principle. Prefer an eclectic system. Favor close classification to a certain extent, dependent on size and character of library and of the various classes. Mnemonics useful within limits, but not when applied as a system throughout. J. N. Larned, *Supt.*)

**United States Senate.**—See table. (Alonzo W. Church, *Lib'n.*)

**Union Theological Seminary.**—Classification based upon divisions in Hagenbach's *Theologische Encyklopädie*. Added to these are other divisions for the non-theological books, which are arranged largely according to frequency of use. San Francisco Theological Seminary library arranged in same manner. "I consider a 'close' classification a delusion and a snare, as it is not the practice of men to write many books which lend themselves to it. \* \* \* Even such 'close' classification as I have carried out wastes space, and ultimately leads to confusion." (Chas. R. Gillett, *Lib'n.*)

**Milwaukee Public.**—Except as to fiction, Dewey system not greatly modified. Scheme as used is printed in *catalog* of 1885. Changes from original are almost entirely those made for Buffalo library. Would change biography entirely, probably alphabetizing all individual lives in one series. [*If classifying anew?*] "This question I could only answer after the most careful thought and comparison, and then in fear and trembling, if the necessity came. We are bound to the Dewey classification, and any ideas of change are playthings merely. We feel the pinches of the Dewey scheme, but I might hesitate to change on the principle of the first swarm of flies and the fox. I admire the new Cutter expansive classification. It, naturally, solves many of the Dewey problems; but I think the mixed letters and numbers of the notation an objection. It is comparatively simple for attendants to learn any scheme, but the general public is troubled by a hieroglyphic-looking book number. I think the general tendency is to underrate this difficulty." [*Close classification?*] "Decidedly, yes. If the dream of access of borrowers to the shelves ever is realized, I think the shelf classification will be even more important than now. My only objection is the more complicated notation required." [*Mnemonics?*] "All other things being equal, the mnemonic element is sometimes a convenience. It hardly seems worth much sacrifice, however. (Theresa West *Act'g Lib'n.*)

**New York Free Circulating.**—Modifies Dewey by using 813 for juvenile fiction, and placing novels by American authors, as well as translations of foreign fiction, with English fiction in 823. Has felt crowding and restriction in 808, collections, treatises, rhetoric. [*Mnemonics?*] "We do not see that it costs anything, and it is invaluable in directing runners in finding books." (Ellen M. Coe, *Lib'n.*)

**San Francisco Mercantile.**—Dewey, with Cutter author marks. "Have no changes to suggest, inasmuch as both systems seem to suit our purpose admirably." Uses 3 figures of Dewey. "For special libraries would think a closer classification indispensable." (H. R. Coleman, *Lib'n.*)

**Minneapolis Public.**—Did not modify Edmands in principle, but reduced it by combining many subclasses and changing author notation from 10,000 to 1,000. Regret this change. "Those who have not used close classification sooner or later need to do it, and the seventh classification of Mr. Cutter seems none too close." (James K. Hosmer, *Lib'n.*)

**Providence Public.**—Use a decimal system strongly resembling the Dewey in notation. "It is not the Dewey system; but this is simply owing to the fact that some system had to be adopted before the Dewey system had been so fully developed as it is at present. If I were starting anew, I should not hesitate to take the Dewey system as it now stands. I favor the opportunity of being able to use a 'closer' classification than 'the first 3 figures,' on occasion. As a matter of fact, we seldom go beyond 4 figures." [See Mr. Foster's paper in *L. j.* 15: C 6-9.] (Wm. E. Foster, *Lib'n.*)

**Essex Institute.**—See table. (Chas. S. Osgood, *Lib'n.*)

**Amherst College.**—"Dewey system was employed here first, in 1874, and remains. The scheme is modified constantly, mainly by dividing or combining classes, and, in doing so, disregarding the decimal plan and the Dewey notation. We classify various departments of the library with respect to their special needs, and have no special reference to the scheme as a whole in making these changes." If classifying anew would use "In the main, that outlined by me in *L. j.* 14." Favor close classification, "but in general would make classes no more minute than Dewey 3-figure classes, and make further subdivisions by blocking off book numbers." Do not think mnemonic notations worth their cost, "but have not given the matter enough attention to speak positively." (Wm. I. Fletcher, *Lib'n.*)

**Young Men's Mercantile, Cincinnati.**—Biography alphabeted by subjects; miscellany, history, travels, fine arts, poetry, science, etc., alphabeted by authors. No shelf numbers. "As I have but two assistants, we put away every morning the books brought in the day before, and, as we have to classify them to put them in their proper divisions, a knowledge of the contents of every book *must* be had. In that way we are hardly ever at fault when books on any particular subject are asked

for; we can get what is wanted without reference to the catalog. The systems of numbering on the outside of the book I object to as practically debarring librarians from what they should know, *i. e.*, the contents of every book. As librarian for fifteen years, I have examined many systems, but find none that I would use." (John M. Newton, *Lib'n.*)

**New Bedford Public.**—Has used a very broad classification owing to crowded shelves. Beginning to apply Dewey. (R. C. Ingraham, *Lib'n.*)

**Hartford Theological Seminary.**—(Case Memorial).—Applying a system prepared for specialized theological library, with 26 general classes marked A-Z, each with form divisions 01-09, and subdivisions 0-9. Full outline submitted. It is very interesting, and the compiler regrets that he has not space to print it verbatim. Use Cutter authoritative and local list. Example of labels:

CF 88	E 2 G 31	F 12	H 74	K 9846	Z 63
R 11	L 96	1874 B 72	T 45	M 37	1871 P 73

If changing would put biography before history. "I think that, as in building a house, so in making a classification, it needs about three trials to make a success. In my opinion Cutter has done the best work in classification of any whose work I have seen." (A. T. Perry, *Lib'n.*)

**Indianapolis Public.**—Library divided into twenty-three main classes, A-Z. Fiction and juveniles arranged alphabetically by authors; other classes, by subjects. Books (separate works) in each class numbered from 1 upwards, as A 1-A 750. Numbers plentifully skipped to leave room for new books. In case of a block, another letter is added; *e. g.*, A 600, A 601, AA 601, AB 601, A 602. Same system used in Omaha Public. "I do not like this system, and if it were not for the magnitude of the work, would change; but am not prepared at present to say which one I would choose." (Eliza G. Browning, *Lib'n.*)

**Princeton Theological Seminary.**—Two main divisions: (1) Theological, with 7 subdivisions marked A-G, and (2) secular, with 14 subdivisions marked I-XIV. Books alphabetized under each subdivision. (Joseph H. Dulles, *Lib'n.*)

**University of Virginia.**—Library grouped in 15 divisions, alphabetized thereunder. Fixed location. (F. W. Page, *Lib'n.*)

**Haverhill Public.**—See table. (Edward Capen, *Lib'n.*)

**Minnesota Historical Society.**—Overcrowded. When new building is completed will use Cutter. (J. Fletcher Williams, *Lib'n.*)



**University of California.**—Applying new system, of which the following is a brief outline:

A Bibliography.	440 Paleontology.
B Dictionaries.	442 Botany.
C Periodicals.	461 Zoology.
1-15 Philosophy.	480 Medicine.
16-51 Religion.	506 Industrial arts.
52 Biography.	507 Agriculture.
54 Geography.	523 Chemistry.
54-255 Geography and history.	536 Chemical technology.
256-287 Politics; administration.	554 Mining.
289-296 Law.	580 Manufactures.
300 Social science.	590 Building arts.
315-332 Economics.	600 Architecture.
333 Science.	610 Domestic economy.
337-356 Mathematics.	613 Recreation.
357-371 Astronomy.	617 Business.
372 Physics; mechanics.	623 Art of war.
401 Civil engineering.	640 Esthetics.
425 Natural history.	Fine arts.
431 Geology.	-999 Languages and literatures.

Class subdivisions are made by adding a lower-case letter or letters, of which a, b, c, invariably stand for bibliographies, dictionaries, and periodicals, respectively. Example:

- 305. Education.
- 305a. Bibliography.
- 305b. Cyclopedias, dictionaries.
- 305c. Periodicals.
- 305d. History of education.
- 305e. Pedagogics; teaching.
- 305em. Teaching of mathematics.
- 305m. Classical, "liberal," education.
- 305n. Technical, industrial education.
- 305w. Woman's education; coeducation.
- 305z. Biographies of educators.

**Bowdoin College.**—Dewey. Biography and genealogy alphabetized in one collection marked B. Lives of kings placed in history; of literary men, with their works. A special class marked M, with several hundred subdivisions, takes the place of 974.1, and includes special collection on Maine. If the system were to be made over, would demand more room for English history, a better place for constitutional history, and an entire recasting of Greek and Latin literature. "In general, I should ask to have the classes fit the books rather than the system, and leave occasional places for a new subject. \* \* \* We do not, however, intend to break away in any important particular from the Dewey system. \* \* \* [If classifying anew?] I can not answer without a fuller examination of Mr. Cutter's system. I think I should

prefer that, in case some genius would arrange a numerical notation for the various subdivisions, on the basis, say, of 10,000 possible classes." (Geo. T. Little, *Lib'n.*)

**American Philosophical Society.**—Uses "a remarkable system invented by a prior librarian, dissimilar to all mentioned [in the circular of inquiry]. \* \* \* It is far from satisfactory, but has been in use too long to change." The system is printed in catalog of above library, 1863. (Henry Phillips, jr., *Lib'n.*)

**Lowell City.**—Dewey, to only three figures for shelving, decimals for catalog. In 822 the Shaksperiana are numbered from 5000 upwards, and other books 1-5000. "Where the readers do not have access to shelves I see no advantage in a closer classification than the first three figures of Dewey; certainly not for a library no larger than ours." (Fred. A. Chase, *Lib'n.*)

**Trinity College.**—Dewey, somewhat modified in theology. (Fredrick B. Cole, *Lib'n.*)

**Andover Theological Seminary.**—Books grouped in seventeen classes, as far as shelves permit, "recognizing such subdivisions as may be natural and convenient." "For library purposes I should wish to avoid minute subdivision." (Wm. L. Ropes, *Lib'n.*)

**New York State Law.**—Outline of classification:

- 1 a New York reports.
  - b New York digests of reports.
  - c New York statutes.
  - d New York legislative journals and documents.
- 2 American reports, digests, and statutes.
  - a States.
  - b United States.
- 3 Amer. state papers (including legislative debates, journals, and documents).
  - a States.
  - b United States.
- 4 British reports and digests (including provinces, except India).
- 5 British state papers (including parliamentary debates, journals, and documents).
- 6 Indian reports and statutes.
- 7 Treatises (in English).
- 8 Law periodicals.
- 9 Trials (civil and criminal).
- 10 France.
  - a Treatises.
  - b Reports.
  - c Statutes.
- 11 Foreign law (other than French).

Statutes and state papers arranged chronologically; all other books alphabeted under author or title, as usually cited. No book numbers.

"Convenience of bench and bar determines classification of a law library. Lawyers must have access to shelves, and they greatly prefer to help themselves to the books wanted. Hence the classification should be as simple and compact as possible. A lawyer finds it much easier to run down the alphabet through a collection of 2,000 volumes of treatises to find the volume wanted than to have the same collection divided into 100 lots representing as many subjects. In the latter case, he has *first* to find the subject, and *second* to find the volume. It is seldom that a lawyer wishes to see all or any considerable number of the works contained in the library. His inquiry usually is for the latest and best work on the topic he is interested in. From an experience of twenty-five years as librarian of this library, I am able to say that the method of classification outlined [above] \* \* \* has given the very best satisfaction. (Stephen B. Griswold, *Lib'n.*)

**Lynn Public.**—Classification includes nineteen main classes and marked by initial of subject, or other letter, subdivided by adding a second letter, and still further, if desired, by figures. "My plan was adopted after studying all the methods then [1878] in use. It has given good satisfaction; but if I were called to arrange a new library I should make a study of all methods now in use. I am favorably impressed with the Cutter system. I do not favor very close classification for libraries of ordinary size." (J. C. Houghton, *Lib'n.*)

**University of Vermont.**—Dewey. Biography alphabeted; lives of authors with their works. (H. A. P. Torrey, *Lib'n.*)

**Illinois State.**—Rough topical groupings. Memory of librarian the only guide in finding books. (W. H. Hinrichsen, *Sec. of State and ex off. Lib'n.*)

**Omaha Public.**—See table. (Jessie Allan, *Lib'n.*)

**Peoria Public.**—See table. (E. S. Willcox, *Lib'n.*)

**Iowa State.**—See table. (Mrs. Mary H. Miller, *Lib'n.*)

**Wellesley College.**—Dewey. Would change sequence of classes, bringing history and sociology on succeeding numbers; so also literature and language, and biography with history. (Lydia B. Godfrey, *Lib'n.*)

**Sage Library.** (*Theol. Sem., New Brunswick, N. J.*).—Uses "a common sense, illogical, unconcatenated, unrelated, unnumbered, unclassified classification. Consult an encyclopedia and put coal under coal, and don't try to reason out that it belongs in the same category with diamonds or pig iron. The public won't reason your way. Put it down arbitrarily coal, and let it go. It is worth while classifying some related subjects, but it is not worth while to show the logic of the classification to any great extent. On the shelf, or in the alcove or department, put all the fine arts together, poetry, painting, sculpture, architecture, drama. Put engraved gems there, too, but don't insist on it that it is a part of sculpture—a division, or a subdivision. Let it stand apparently unrelated. \* \* \* We classify our books in alcoves, referring



in catalog to the alcove, right or left side of it. When in the alcove the shelf tags do the rest. No numbers on the books, which are alphabetized by author, under subject. This would probably not work well in a large public library, but in a small scholars' library like this it does very well. We have too many rare and handsomely bound books to plaster them over with labels or stamped numbers. The great still-hunt of library science at present seems to be after *finding a book on the shelf*. As to whether it is worth a rap after it is found, your average librarian does not concern himself; yet that is just the most important part of his business. He should guide to the best books and tell the reader what he needs. If librarians knew more about the *value* of books and less about their *number*, the public would be better for it. Of course this is an old foggy idea. I got it from an old fogey in the British Museum many years ago. His name is Richard Garnett—bless him! \* \* \* I believe in many subjects unclassified. Two books on suicide should have a subject division of suicide, but should not figure under the chief head of medicine, social science, or anything of that sort. I don't believe in any system that presupposes knowledge or ability or insight in the reader. The average reader is a dunce and neither knows nor cares anything about systems. Further, I don't believe in making an obscure science out of a few plain facts. Make everything as plain as a barn door." (John C. Van Dyke, *Lib'n.*)

**Maine State.**—Dewey. Classification of law modified and enlarged. Dewey classification of law very defective; that of history nearly perfect. Recommends bringing form divisions of literature (as fiction) together and subdividing by languages, instead of the reverse. Will use Cutter's author table. "Some of his [Dewey's] great classes are not clearly defined and entirely logical in arrangement. Nevertheless, it seems to me that Dewey's work is the best I have seen. Some of our librarians have run nearly mad on the subject of classification, and have rendered life a burden to those who attempted to carry out fully their theoretical classification. The simplest form is best, in this as in everything else intended for real help and use." (L. D. Carver, *Lib'n.*)

**Syracuse University.**—Uses provisionally a fixed location, but books are so arranged that, as far as possible, the initial of the subject division corresponds with the letter of stack section. "The intention is to have a relative system eventually. From what I have seen of the several systems I think that none now in use will be absolutely adopted, but a modification of some one of them, or a new one entirely." (Henry O. Sibley, *Lib'n.*)

**New York Y. M. C. A.**—Dewey. Changes suggested; index enlarged. History, travels, biography, too crowded; medicine under science; amusements under sociology. [If beginning anew?] "I think I should adopt the same system; I, however, might use Mr. Noyes' (Brooklyn) admirable system after a more thorough study of it." (R. B. Poole, *Lib'n.*)

**New York Bar Association.**—Reports and statute law, arranged by countries and States. Text-books, etc., alphabetically by authors. (Wm. J. C. Berry, *Lib'n.*)

**Philadelphia Athenæum.**—See table. (Louis K. Lewis, *Lib'n.*)

**Wesleyan University.**—See table. (Wm. J. James, *Lib'n.*)

**Woodstock College.**—Library largely theological. Theology in 10 divisions, of which, *e. g.*, scriptura sacra subdivided into Biblia (Latina, Græca, etc.), Introductio, Vindiciæ Cathol., Philolog. Biblica, Concor-dantiæ, Comment. Cathol., Comment. Acathol., Tractatus Varii, etc. Fixed location. "Were I to begin the arrangement of the library anew I should follow the same method. \* \* \* For practical purposes it matters very little whether I find a book according to the decimal system or any other. In my opinion classification should depend entirely on the particular library, on the room, and the number of books to be placed." (A. J. Maas, *Lib'n.*)

**Newark Public.**—Dewey, unimportant modifications. Sometimes carries classification to 5 figures, but "for small libraries should say most decidedly not closer than 3 of Dewey." (Frank P. Hill, *Lib'n.*)

**Cambridge Public.**—Cutter classification. Moved into new building just after issuing a new catalog, and could not change notation, which was that of the Boston Public, now used to indicate movable location. "Were I to start anew I should choose between Cutter's and Dewey's systems; should prefer the former, only the introduction of letters very much increases the probability of mistakes on the part of the public. \* \* \* I have arranged my reference library by the Dewey system and like it for that. I should not use either for a small library—say less than 10,000 volumes." (Almira L. Hayward, *Lib'n.*)

**Franklin Institute.**—Broad classification, fixed location. Would use Dewey, with Cutter's author table, classifying as closely as possible. (Alfred Rigling, *Lib'n.*)

**Hartford Public.**—Dewey, with modifications, partly Fletcher's. English fiction, biography, poetry, arranged alphabetically. French, German, juveniles, by themselves, classified. (Miss C. M. Hewins, *Lib'n.*)

**Oberlin College.**—Dewey, modified. In the classics and Shakspeare all translations, biographies, criticisms, etc., go with author's works. With these exceptions the Dewey author marks in literature are disregarded, and alphabetic arrangement used, as also in biography. Periodicals indexed in Poole, arranged alphabetically by themselves, no class number; so also reference books. United States documents have a classification and notation of their own. Changes suggested: Combine philosophy and religion under class 1; combine 110 and 120 with their subdivisions; put 178 under sociology. Define more accurately 210 and subdivisions, and their relations to 239 and subdivisions; entirely rewrite 230, especially 231 and 233, which are very unsatisfactory; rewrite 262, bringing all prayer under 264, and therefore change

main divisions. Under class 300, rewrite 321 and 328, putting 328 somewhere under 350, all of which should be rewritten with reference to books and not to theoretical division. Class 570 is unsatisfactory. Should forego advantages of 0 in 900-909, putting geography and travel under 900-909, biography 910-920, and what is now 900-910 under 920-930. "Though from standpoint of classification I like some parts of Cutter much better, still the simplicity of the Dewey call numbers, or, rather, the ease with which the average student can use them after a short period, is too great an advantage to give up." (A. S. Root, *Lib'n.*)

**Pratt Institute.**—Dewey, carried out to 3 figures only, save in a few classes. Does not favor closer classification except for libraries of 60,000 volumes and upwards. (Mary W. Plummer, *Lib'n.*)

**Portland (Me.) Public.**—See table. (Alice C. Furbish, *Act'g Lib'n.*)

**Newton Public.**—Fixed location, except for periodicals. Library divided into 10 classes. Example of notation: 51.430 = class 5, shelf 1, 430th work. (Elizabeth P. Thurston, *Lib'n.*)

**Massachusetts Historical Society.**—See table. (Samuel A. Green, *Lib'n.*)

**Redwood, Newport.**—Cutter's Athenæum, occasionally modified by transposing subdivisions, as in sociology. "As I have worked for several years with Mr. C. in elaborating his classification, I feel sufficiently familiar with it to be able to make the changes without confusion." Prefer Cutter's sixth. [*Mnemonic notations worth their cost?*] "By no means !! Except for some few grand divisions, I have little faith in the mnemonic element." (Richard Bliss, *Lib'n.*)

**Taunton Public.**—Awaiting removal into larger building before introducing new classification on the shelves. (E. C. Arnold, *Lib'n.*)

**United States Military Academy.**—See table. (Lieut. Sedgwick Pratt, *Lib'n.*)

**Manchester City.**—Cutter classification in catalog. Books numbered consecutively on shelves. No class marks. Would use Cutter. (Mrs. M. J. Buncher, *Lib'n.*)

**Hamilton College.**—See table. (Melvin G. Dodge, *Lib'n.*)

**Philadelphia Academy of Natural Sciences.**—Library devoted exclusively to natural sciences; divided into two sections: (1) Periodicals, etc., arranged geographically, and (2) monographs, subdivided under 18 heads. Books numbered consecutively under each department. "The desirability of a closer classification in some of the departments \* \* \* is evident, but not pressing. Practically the arrangement works very well, the fixed location of each book being of advantage." If changing, would probably use Dewey, with modifications. (Edw. J. Nolan, *Lib'n.*)

**Bangor Public.**—See table. (Mary H. Curran, *Lib'n.*)

**Jersey City Public.**—Dewey, with Cutter author numbers. "I would carry out the classification to one or two decimals in all cases



where subdivisions are called for were I to start anew. In the Cutter numbers I would also use the table extended to three figures instead of the one using only two. The main difficulty we have is in getting the books back on their shelves in their correct order with the help we employ—girls from 14 to 16 years of age. The combination of figures and letters seems to puzzle them, and requires more care than if only figures or letters were used separately. If some author table like Edmands's, composed entirely of figures, were carefully worked out and had proved satisfactory in its application, I am not sure but that with the class of help employed in this library it would work more satisfactorily than the Cutter tables." \* \* \* "The mnemonic element is certainly very valuable after the system is in practice." (Geo. Watson Cole, *Lib'n.*)

**Peabody Institute, Peabody, Mass.**—Cutter. "As we shall not change anything at present, it is unnecessary for me to venture an opinion [as to choosing anew]. Probably in five years some of the present systems \* \* \* will be changed for something simpler and more economical." (J. Warren Upton, *Lib'n.*)

**Toledo Public.**—Dewey, modified. Recommends "greater simplicity, not so close classification. The excess in numbers added is often perplexing to those going for books in a hurry." (Mrs. Frances D. Jermain, *Lib'n.*)

**Lawrence (Mass.) Public.**—"In a library where the public do not have access to the shelves a close classification is not of much importance. If the assistants can find the books readily that is all that is necessary. The fewer letters and numbers borrowers have to write on the call slips the better they are suited, and the less likely are they to make mistakes. All frequenters of the library have access to classed catalogs, and can find books treating of any particular subject." (Frederic H. Hedge, *Lib'n.*)

**United States Naval Academy.**—Ten main classes, A-I, with subdivisions, 1-50, etc. Would prefer "some system with more than 10 classes." (A. N. Brown, *Lib'n.*)

**Dayton Public.**—Twenty main classes, subdivided as convenient. "From the experience which we have had, taking into consideration the size of library, present rate of growth, character of help employed, promptness of service, etc., we would use the same principle of classification [if beginning anew], only applied in greater detail, and carried out to its last consequences. The result would be an arrangement much like that of the Congressional Library or the Peabody Institute (Baltimore)." (Miss Minta I. Dryden, *Lib'n.*)

**Kansas State.**—Smith, with additions. Would use Dewey—"so says my cataloger." (H. J. Dennis, *Lib'n.*)

**San Francisco Law.**—Legal text-books arranged alphabetically; American reports alphabetically by States; English reports alphabetically as cited; United States, State, and foreign statutes same arrangement; legal periodicals follow same plan. No class marks. (Not signed.)

**Woburn Public.**—"In 1879 was introduced the Dewey 1, 2, 3 system, the classes represented by a letter (a numeral would do equally as good) and the individuals by a number. This is still in use, unmodified." [*Mnemonics useful?*] "No; I do not believe in burdening patrons with an unnecessary number of symbols. They mean nothing to them, and not much more to anyone else. The old-fashioned shelf number (say 5553.25) is best understood by the public generally." (W. R. Cutter, *Lib'n.*)

**Boston Library Society.**—See table. (Miss Letitia F. Stubbs, *Lib'n.*)

**Iowa State University.**—"The Dewey has so far been reasonably satisfactory, hence see no reason to change." (J. W. Rich, *Lib'n.*)

**Nebraska State.**—Largely law. Miscellaneous division classified somewhat after Perkins's method. Expects to add largely to the latter, and will then reclassify, deciding upon a system after publication of this report. (D. A. Campbell, *Lib'n.*)

**St. Louis University.**—Dewey. "The purposes of a public library, to be used by all classes of persons, and those of a learned institution being considerably divergent, I find that the mechanical application of the above [Dewey] system, which has already been made here, is defective in many respects: (1) Because of the superfluity of classes for a purpose more or less specialized; (2) because of the unimportant localization assigned to the prime divisions, in the same premises. \* \* \* [Cites examples in theology.] If there is any one of the above systems [mentioned in circular of inquiry] which would meet our requirements, I should be glad to adopt it. Otherwise [if changing] I would take suggestions from them and strike out on the above line [outlined]." \* \* \* (Thos. Hughes, S. J., *Lib'n.*)

**Troy Young Men's Association.**—Fixed. Alphabetized under a few general divisions. "I believe that the most simple arrangement and classification of books is, under any and all circumstances, the best method. Close classification destroys chances for memorizing place, contents of volume, and general usefulness, is costly, and of no real value." (DeWitt Clinton, *Lib'n.*)

**University of Minnesota.**—By departments of instruction. No class marks. When moving into new building will carefully consider plans of classification and shelving. Classification in subject catalog based upon Poole's Chicago Public; full outline submitted in MS. "For a college library of moderate size it seems to me that a rough classification according to the departments of instruction will be as useful as any." (Wm. W. Folwell, *Lib'n.*)

**University of the South.**—Dewey. In literature follows Dewey only to third figure, and in biography to the fourth; Cutter marks thereafter in each case; so also in 283; elsewhere, the 5-place Dewey. "If I had the work to begin again I should be content with three places for a library the size of ours." (Benj. W. Wells, *Lib'n.*)



**Los Angeles Public.**—Dewey. Fiction and juveniles alphabetic, closely following Milwaukee notation. In music, “where Dewey gives 782.2 to a book on Wagnerian music, we would classify the music itself 78.22, *i. e.*, simply carry the third number over the decimal.” Bound magazines arranged alphabetically. United States public documents have a non-Dewey classification. If beginning again, would classify very closely. (Tessa L. Kelso, *Lib'n.*)

**Newburyport Public.**—[*If classifying anew?*] “This is a question I can not answer. The more I study the various schemes, the harder I find it to come to a decision; but, on the whole, I rather favor the Dewey system, modified to meet my particular case, but I have no desire to establish a museum of minute classification.” (John D. Parsons, *Lib'n.*)

**Haverford College.**—[*Would use?*] “Probably a modification of Perkins. Lack of funds and hope of a new building have prevented revision. No system should be followed rigidly. Whatever gives most economy of space, clearness in detail, ease in finding a book, should be followed in accordance with circumstances. Dare to be inconsistent.” (Allen C. Thomas, *Lib'n.*)

**University of Wisconsin.**—Within a year will probably adopt either Dewey or Cutter, with modifications. “Our present classification in its large divisions corresponds to departments of instruction in the university, and naturally and rightly, I must think, sins against any theoretical system of classification in some points.” (Walter M. Smith, *Lib'n.*)

**Massachusetts Institute of Technology.**—Dewey. “Have redivided 547, and have subdivided further a few of the divisions. There are many arrangements which are inconvenient for us, for example, the separation of 400 and 800, of 380 and 330, of 332 and 336, of 335 and 331. The principles of the system seem to me about as simple and easily learned as possible.” [*Close classification?*] “Yes; where access to the shelves is perfectly free the closest possible classification seems to me desirable.” (Clement W. Andrews, *Lib'n.*)

**Colby University.**—Dewey in galleries; fixed location on ground floor (most-used books). Free access. No shelf numbers. “Am very well pleased with the [Dewey] system.” Often use 7 figures. Make no use of mnemonics. (Edward W. Hall, *Lib'n.*)

**University of Rochester.**—“The Dewey system (4th ed.) is used in classifying new books and in a gradual reclassification of the older portion of the library. This was done last January, a new librarian having been appointed from the faculty of instruction. Being shown this blank upon its receipt, he turned it over to me to answer. His opinion of the Dewey system is more favorable, of our obsolescent system much less favorable, than those herein expressed.” A full outline of the old system is given in MS. It has 42 main classes, with more or less subdivision, the books being arranged under each according to a combined alphabetical-and-size table (1-1000) adapted from Schwartz. “In the



details of the Dewey system I find what seem to me to be the disjunction of similars and the conjunction of dissimilars, as well as the failure to give adequate treatment to some important subjects. \* \* \* Personally, I think the obsolescent system, \* \* \* with some further subdivision in the case of a few classes, is adequate to the purposes of a college library till it attains a much larger size than ours." (H. K. Phinney, *Ass't Lib'n.*)

**College of the City of New York.**—Books classed under 14 main divisions and 270 subdivisions, corresponding to headings in printed subject catalog. Present system satisfactory. (Chas. G. Herbermann, *Lib'n.*)

**Kansas State Historical Society.**—See table. (F. G. Adams, *Lib'n.*)

**Northwestern University.**—Awaiting a new building. (Lodilla Ambrose, *Ass't Lib'n.*)

**Salem Public.**—Dewey, with 3 figures, except in history and travels, where 4 or 5 are used; F for all fiction in English, original or translated; B for individual biography, with Cutter number; 920 for collective biographies in one series by authors. Suggested changes: A better country arrangement; consolidation of philology and literature, giving room for better arrangement of travels. If beginning anew, would adopt Cutter's sixth. "This seems to me about what is needed in the average public library of 10,000 to 100,000 volumes. Nearly all the necessary subdivisions can be made with two letters, or one letter and two figures." (Gardner M. Jones, *Lib'n.*)

**Rochester Theological Seminary.**—Theology only. See table. (Howard Osgood, *Lib'n.*)

**Northampton Public.**—Books classified in nine departments. (Caroline S. Laidley, *Lib'n.*)

**Fletcher Free, Burlington, Vt.**—Similar to Brookline and Ames Library at North Easton, Mass. (Sarah C. Hagar, *Lib'n.*)

**North Carolina State.**—See table. (J. C. Ellington, *Lib'n.*)

**South Carolina State.**—Contains only United States and State documents. "I have had no [previous] experience in library work and have no system. I have arranged the books just after a common-sense plan, and as it seems to work well I have attempted nothing else. Being a woman, and having very little experience, I do not feel competent to make any suggestions. Each State in the Union is given space and the books are arranged according to years. The members of the legislature tell me that this plan suits them better than any that has ever been tried in this library." (Mrs. Caroline Le Conte, *Lib'n.*)

#### SUMMARY OF RETURNS.

To put the results of this canvass into a ballot box and figure out exactly how many librarians favor this or the other method, would be most misleading, for several reasons. Other things being equal, the experience gathered in a library of 500,000 volumes is worth about ten

times as much, from the classifier's standpoint, as that afforded by working in one of 50,000 volumes. The answers to my queries are in some cases intended to apply to libraries generally, but most of the librarians have had only their own institutions in view, and, as these differ so widely from each other in scope and functions, it is certain that the same man might have answered differently if his experience had been confined to libraries of another class. Many of the officers reporting have given but slight attention to the methods introduced within the past few years, being satisfied with the systems bequeathed to them or finding it quite impracticable to change. Finally, many of the replies are indefinite, and a few are ambiguous.

The only summary of results that I can glean from these returns is as follows:

1 American librarians are substantially agreed that books should be classified on the shelves in the order of subjects treated rather than in that of accession, or chronologically, alphabetically, by size alone, or by any other criteria, leaving the subarrangement (under classes) to be determined by the requirements of each case. This is the only point in the problem of classification that can be considered settled.

2 One-half of the libraries reporting, including most of the older and larger ones, use systems of their own.

3 Of the printed schemes that have appeared within the past seventeen years, the Dewey system, which is the oldest, is used wholly or partly in one-third of the libraries on our list. Mr. Cutter's expansive system (not yet finished) is rapidly growing in favor. The others are little used.

4 Most of the users of the printed schemes modify them more or less. The chief objections urged against the Dewey, Cutter, and similar systems are that the classification is arbitrary, that it is bound up in its notation, and that the latter is too complicated or too long.

5 A movable location is generally preferred to fixed shelf numbers, but some librarians of wide experience reject it.

6 The tendency is strongly toward close classification, but it is warmly opposed by many.

7 Mnemonic notations are condemned by a majority of those expressing an opinion, but in a considerable number of libraries such expedients are found useful.

This is all that I have been able to make out of the mass of data submitted to me. Librarians agree that books should be classified by subjects on the shelves as well as in catalogs, but they disagree as to how it should be done. Take, for example, the largest five libraries in America; no two of them use the same system, and their replies to the three fundamental questions in our table in each case stand as follows:

Yes.....	2
No .....	2
No experience.....	1

I conclude that the day of cooperative classifying is not yet, and that if such a project ever be realized it will only come through the work of a committee of experts. No one man is competent.

Granting that it would be practicable to parcel out the labor of devising a system for classifying books, so that each science and art would be subdivided by a specialist, the gain would be twofold :

1 Each librarian would save the time and expense of devising a scheme of his own, or of patching up the antiquated one bequeathed to him ; and

2 A system prepared by such a body would give greater promise of permanence and general usefulness than any drawn up by the average librarian.

It is evident that the same system can not be used in all kinds of libraries. Yet if we take any two university libraries, for example, or any two free popular libraries, it will be found that they differ from each other mostly in size or in degree of symmetry, but not in scope, nor in the character and wants of their users. I can see no good reason why all libraries of a given class might not use the same general method with mutual advantage.

The principal reason why such a scheme has not been undertaken is clearly stated in Professor De Morgan's objection to a classed catalog, that "it is more difficult to use than to make, being one man's idea of the subdivision of knowledge."

No system for classifying books in large libraries can give general satisfaction unless it be based on something more durable than personal taste. In order to be reasonably permanent and usable, the method adopted must be governed by some underlying principle of association which is commonly accepted by students in the different departments of knowledge. The question as to whether a uniform system of classification may be practicable for a given class of libraries, resolves itself into the question whether a method can be found which will be scientific rather than arbitrary. All schemes looking only to present conveniences must soon result in that confusion which reigns in nearly all great libraries at the present day ; a confusion which makes library service doubly expensive, and causes those irritating delays with which scholars the world over are but too familiar.

But it is objected that no logical classification of books is possible, owing to these two facts :

1 The same books may treat successively of many different things ; that is to say, it may be of composite structure, or even a conglomerate.

2 A book may discuss a problem involving many entirely diverse principles and branches of knowledge. Consequently our classes will necessarily overlap, and the boundary lines between them will be shadowy.

But precisely the same difficulties arise when we attempt to classify anything else whatsoever. There may be as many different classifica-



tions of a thing as it has characteristics which may be measured against those of other things, and these various classifications may be equally logical, equally scientific. Three dimensions of space would not suffice to show for any one thing in nature all of the relationships that it bears to other things. Nothing of this sort has been attempted in any science, and it is unfair to criticise a classification of books on the ground that it does not bring all correlatives together. When we come to conglomerates, such as a volume of essays, or Burton's "Anatomy of Melancholy," we must classify them just as a geologist classifies the conglomerate rocks, by form or locality, rather than by composition or structure. There is no greater difficulty in the one case than in the other.

The boundary lines between our classes will often be vague and shadowy. But so they are in any classification. We do not even know where plant life stops and animal life begins; yet that does not prevent our having a science of botany and another of zoology.

The object of a classification is to bring together things which are like and to separate things which are unlike. It is as easy to bring together books of similar scope as to bring together plants of similar type. If different types of plants can be arranged in a system which will show their relative development, so can the literature of plants be arranged with scientific method, and so can all literature.

It is a singular fact that many schemes of classification are enslaved to their notations. The attempt to make out of the book number a structural formula, showing the dependence of classes by giving a separate figure or letter to each stage of descent, invariably results in an irrational classification disfigured with long and cabalistic marks. The object of a notation is to enable us to find or replace a book with ease and certainty. Anything that interferes with this is a mistake. The scheme of classification should be made without any thought of a notation, and numbers assigned to it afterwards, taking care to allow for the future growth of the various classes.

By using a book number, which shall in no case be longer or more complicated than 1234az (in which the figures are read as integers, and the order of figures and letters is always the same), it is possible to mark 7,000,000 volumes so that each volume is identified as it would be by an accession number. Furthermore, such a number will indicate the exact relative position of each subject, author, work, translation, edition, volume, copy, in a collection of 7,000,000 volumes, in which the books are classified by subjects, on the movable plan, with the utmost possible "closeness," and the numbers will not fetter the classification in any respect whatever.

This being true, it follows that if we start with an empty building and let a library grow up within it in the normal way, the same notation will suffice for a collection of 700,000 volumes, on the supposition that the author of the classification made an average error of 90 per

cent in estimating the growth of every subdivision in his scheme. Thereafter, by adding characters, he could provide for interpolations at any point and to any extent. A similar notation using nothing but figures would be quite practicable. In such a case it is not likely that a number longer than 1234.567 would ever be needed in any library, save a few of the great national collections, and this number would be read as it stands, the figures before the decimal point being integers.

In order to attain this we have only to sacrifice the halfway structural formula, with its attendant halfway mnemonicity.

#### REFERENCE LIST ON CLASSIFICATION.

The following list of references is by no means exhaustive. With a few exceptions, it includes only the later literature of the subject. The abbreviations stand for the following periodicals, etc.:

- Central.* Centralblatt für bibliothekswesen. Leipzig.  
*Conf. lib. Lond.* Conference of librarians in London, Oct., 1877. London.  
*L. A. U. K.* Transactions and proceedings of the annual meetings of the Library Association of the United Kingdom. London.  
*L. j.* Library journal. New York.  
*Lib.* The library [*successor to Library chronicle*]. London.  
*Lib. chron.* Library chronicle. London.  
*Riv.* Rivista delle biblioteche. Firenze.  
*U. S. '76 rep.* U. S. BUREAU OF EDUCATION. Public libraries in the United States of America . . . Special report. Washington, 1876. 8°.

#### *Classification of knowledge.*

This has a very considerable literature of its own. For a résumé of the older systems see A. E. B. Woodward's system of universal science (Phil., 1816. 4°). On the scientific method, the following are recommended:

- BAIN, A. Logic. New ed. N. Y. (*Longmans*), 1882. 12°.  
 DAVIDSON, W. L. The logic of classification. (*Mind*, 12: 233-53.)  
 JEVONS, W. S. Principles of science. N. Y. (*Macmillan*), 1874. 2v. 8°. One vol. ed., 1889. 12°. His remarks on the classification of books show little acquaintance with the problem.  
 SPENCER, H. Classification of the sciences. (*In his Recent discussions*. N. Y. (*Appleton*), 1871. 12°.)  
 STANLEY, H. M. Classification of the sciences. (*Mind*, 9: 265-74.)

#### *Classification of books.*

#### HISTORY. OUTLINES OF OLDER SYSTEMS. CRITICISM.

- COLLAN, K. Om bibliografiska systemer och biblioteksmethoder . . . Helsingfors (*Frenckell*), 1861. 8°. 4+64+13 p.  
 COUSIN, J. De l'organisation [*sic*] et de l'administration des bibliothèques . . . Paris (*Pedone-Lauriel*), 1882. Sm. 8°. [3]+11+374 p.  
 EDWARDS, E. Memoirs of libraries; including a handbook of library economy. London (*Trübner*), 1859. 2v. 8°.  
 FUMAGALLI, G. Cataloghi di biblioteche e indici bibliografici . . . Firenze (*Sansoni*), 1887. 8°. 19+199 p. (See *Central*, 4: 556-58. Kephart, *L. j.*, 12: 547-48.)  
 ——. Della collocazione dei libri nelle pubbliche biblioteche . . . Firenze (*Sansoni*), 1890. 8°. 7+165+[1] p. (See *Bruschi, Riv.*, 3: 46.)

- GAR, T. *Lecture di bibliologia* . . . Torino (*Unione Tipogr. Ed.*), 1868. 8°. 18+340 p., table.
- GRAESEL, A. *Grundzüge der bibliothekslehre* . . . Leipzig (*Weber*), 1890. 16°. 12+424 p. (See Meyer, *Central.*, 8: 54-57. Brusch, *Riv.*, 3: 47. Hull, *L. j.*, 16: 118-19. Tr. into Italian by Capra, 1893.)
- OTTINO, G. *Bibliografia* . . . 2d ed. Milano (*Hoepli*), 1892. 16°. [3]-8+166 p.
- and FUMAGALLI, G. *Bibliotheca bibliographica italica—Catalogo degli scritti di bibliologia, bibliografia e biblioteconomia pubblicati in Italia, e di quelli riguardanti l'Italia pubblicati all' estero* . . . Roma (*Loreto Pasqualucci*), 1889. 8°. 24+431+[2] p.
- PARK, R. *Pantology; or, A systematic survey of human knowledge* . . . [also applied to the classification of books]. 3d ed. Philadelphia (*Hogan & Thompson*), 1844. 8°. 587 p. 12 *plates*.
- PEIGNOT, G. *Dictionnaire raisonné de bibliologie* . . . Paris (*Villier*), 1802-4. 3 v. 8°.
- PETZOLDT, J. *Bibliotheca bibliographica* . . . Leipzig (*Engelmann*), 1866. 8°. 12+939 p.
- RICHO, G. . . . *Traité de l'administration des bibliothèques publiques* . . . Paris (*Dupont*), 1885. sm. 8°. 8+421 p.
- SACCONI-RICCI, GIULIA. *Una visita ad alcune biblioteche della Svizzera, della Germania, e dell' Austria*. Firenze (*Carnesecchi*), 1892. sq. 16°. [2]+288 p. +14 fold. Tables. (Repr. from *Riv.*, 4.)

## SYSTEMS OF CLASSIFICATION.

(Includes systems intended for catalogs.)

- BONAZZI, G. *Schema di catalogo sistematico per le biblioteche* . . . Parma (*Batteli*), 1890. 8°. [3]-14+105+[1] p. (See Fumagalli, *Riv.* 2: 78-79. Brusch, *Riv.* 3: 47-48. Bliss, *L. j.* 14: 5-8.)
- BRITISH MUSEUM SYSTEM. (Garnett, *Conf. lib. Lond.* 108-14, 188-93; *L. j.* 2: 194-200. G. W. Harris, *L. j.* 12: 331-34. On the Cornell univ. adaptation see Harris, *L. j.* 16: 138-39.)
- BROWNBILL, J. *Science and art: A theory of library classification*. (*Lib. chron.*, 3: 133-36.)
- CUTTER, C. A. *Another plan of numbering books*. (*L. j.* 3: 248-51; 4: 88-90.)
- *Classification on the shelves*. (*L. j.* 4: 234-43.)
- *Thirty-five versus ten*. (*L. j.* 7: 62-63.)
- *Expansive classification*. [Mr. Cutter's new system. Seven classifications, cumulative, adapted to libraries of different sizes. The 1st-6th are published, with index; the 7th is in press. Publ. by the author, Forbes library, Northampton, Mass.] (On Mr. Cutter's systems see Schwartz, *L. j.* 3: 302. Goddard, *L. j.* 10: 55-56. Bliss, *L. j.* 14: 242-44. Kephart, *L. j.* 17: 228. Thomas, *L. A. U. K.* 4-5: 182-84. Graesel's *Bibliothekslehre*, 236-37. Fumagalli's *Della collocazione*, 129-31.)
- DEWEY, MELVIL. *Decimal classification and relative index*, . . . 5th ed. Boston (*Library bureau*), 1894. sm. 4°. 41+[240]+407-593+[5] p. (1st ed., 1876; 2d, 1885; 3d, 1888; 4th, 1891. Tr. into Italian by Mondino in 1885 (Palermo). See *U. S. '76 Rep.*, 623-48. Larned, *L. j.* 7: 127-28. Lane, *L. j.* 10: 258 (Dewey's reply, *L. j.* 10: 316). Perkins and Schwartz, *L. j.* 11: 37-43, 63-74, 156-60 (Dewey's reply, *L. j.* 11: 100-6, 132-39; Mann's, 11: 139-41). Axon, *Conf. lib. Lond.*, 166. Thomas, *L. A. U. K.* 4-5: 182. Kay, *Nineteenth century*, Oct., 1884, p. 624-29 (Thomas's reply, *Lib. chron.* 1: 181-82). Graesel, *Central.*, 3: 542, and his *Bibliothekslehre*, 234. Fumagalli's *Cataloghi*, 135-37, and his *Della collocazione*, 126-28, 133. Larned's modification, in *L. j.* 4: 40, 42. Fitzpatrick's, *L. j.* 4: 41.)



- EDMONDS, J. New system of classification and scheme for numbering books . . . Philadelphia [*Mercantile library*], 1883. 8°. 29 p. (See also his art. in *L. j.* 4: 38-40, 56. See Dewey, *L. j.* 4: 42-44.)
- FLETCHER, W. I. Library classification: theory and practice. (*L. j.* 14: 22-23, 77-79, 113-16. See Bliss, *L. j.* 14: 244.)
- Library classification. Reprinted, with alterations, additions, and an index from his "Public libraries in America" [of same date]. Boston (*Roberts Bros.*), 1894. 8°. 32 p.
- HARRIS, W. T. System of classification [with an] essay on [the same]. (In Catalog of the St. Louis public school library (St. Louis, 1870. 8°.) pp. 3-16. See *U. S. '76 Rep.* 650-62. *Journ. of spec. philos.* 4: 114-29. Thomas, *L. A. U. K.* 4-5: 181.)
- HARTWIG, O. Schema des realkatalogs der k. Universitätsbibliothek zu Halle a. S. 3<sup>tes</sup> beiheft zum Centralblatt für bibliothekswesen. Leipzig (*Harrassowitz*), 1888. 8°. [3]+345+[4] p. (See Bliss, *L. j.* 14: 245-46. Tedder, *Lib.* 1: 21.)
- HARVARD UNIV. LIB. SYSTEM. (On the classification in catalog and on shelves see *L. j.* 6: 9-10, 54, 116; 9: 50-51; 10: 259-60; 11: 203-9. Winsor, *Conf. lib. Lond.* 164. Also the index to the subject-catalog, mentioned below.)
- LARNED, J. N. A nomenclature of classification. (*L. j.* 9: 62-69. See Cutter, *L. j.* 9: 115. Lane, *L. j.* 10: 257-58.)
- OGLE, J. J. Outline of a new scheme of classification applicable to books. (*Lib. chron.* 2: 160.)
- PALERMO, F. Classazione dei libri a stampa dell'I. E. R. Palatina, in corrispondenza di un nuovo ordinamento dello scibile umano. Firenze (*Bibl. Palatina*), 1854. 4°. 114+[1]+388 p.
- PERKINS, F. B. A rational classification of literature for shelving and cataloging books in a library . . . Revised ed. San Francisco (*the author*) [now sold by *Library bureau*, Boston], 1882. 8°. 57+4 p. (First ed., 1881. See also his art., *L. j.* 4: 226-31. Dewey, *L. j.* 7: 60-62. Larned, *L. j.* 7: 123-30. Smith, *L. j.* 7: 174. Thomas, *L. A. U. K.* 4-5: 181. Fumagalli's *Della collocazione*, 135-36.)
- POOLE, W. F. (See his article on Organization and Management of Public Libraries in *U. S. '76 Rep.* 492-95, and the finding lists of Chicago public library.)
- SCHLEIERMACHER, A. A. E. Bibliographisches system der gesammten wissenschaftskunde, mit einer anleitung zum ordnen von bibliotheken . . . Braunschweig (*Vieweg*), 1852. 2v. 8°.
- SCHWARTZ, J. A "combined" system for arranging and numbering. (*L. j.* 3: 6-10. See *U. S. '76 Rep.* 657-60. Dewey and Cutter in *L. j.* 3: 339-40.)
- A mnemonic system of classification. (*L. j.* 4: 3-7. See Dewey, Perkins, and Cutter, *L. j.* 4: 92.)
- A new classification and notation. (*L. j.* 7: 148-66. See also his art., *L. j.* 7: 84-85.)
- An alphabetico-mnemonic system of classifying and numbering books. (*L. j.* 10: 25-27, 77-78, 149-50, 174-75, 371-75. See Lane, *L. j.* 10: 257. Lane and Cutter, *L. j.* 11: 8-9.)
- SHURTLEFF, N. B. A decimal system for the arrangement and administration of libraries. Boston (*privately printed*), 1856. 4°. [4]+80 p. (A decimal system of notation applied to fixed shelves. Used in the Boston public library since 1858. See Dewey, *L. j.* 4: 61, 120.)
- SMITH, L. P. On the classification of books . . . Boston (*Library bureau*), 1882. 8°. 70 p. (See his art., *L. j.* 7: 172-74. Also Thomas, *L. A. U. K.*, 4-5: 184. Fumagalli's *Della collocazione*, 134-35.)
- STEFFENHAGEN, E. Die ordnungsprincipien der Universitäts-Bibliothek Kiel . . . Burg (*Hopfer*), 1888. 8°. 6+33 p. (See also his *Über normalhöhen f. büchergeschosse*. Kiel, 1885. 8°. 11 p.)

VILLA PERNICE, A. Norme per l'ordinamento delle biblioteche. Milano (*Galli e Raimondi*), 1889. 4°. 27 p.

ZANGEMEISTER, K. System des real-katalogs der Universitätsbibliothek Heidelberg. Heidelberg (*Winter*), 1885. 1. 8°. 9+54 p. (See Harrassowitz *Central*. 2: 425-27.)

—— [Same. 2d ed.] Heidelberg (*no publ.*), 1893. f°. [43] p.

Other references may be found in Graesel's *Bibliothekslehre*, 386, and in Fumagalli's works.

The following indexes of subjects will be found useful:

CINCINNATI PUBLIC LIBRARY. Subject index to the location of the books and pamphlets contained in the . . . library . . . Cincinnati (*the library*), 1879. 1. 8°. 6+[5]—61 p.

HARVARD UNIVERSITY LIBRARY. Index to the subject catalog. Cambridge, Mass. (*the library*), 1886-91. 8°. 4+165 p. For sale by the *Library bureau*, Boston.

MAES, C. Saggio d'indice per materie a sistema nuovissimo della R. Biblioteca Universitaria di Roma. Roma (*Forzani*), 1881. 4°. 126+[1] p.

I have not seen the printed systems of classification of the following libraries:

Berlin, K. k. Bibliothek.

Franckfurt a/M. Stadtbibliothek.

#### UNIFORMITY OF PRACTICE.

Dewey, *L. j.* 3: 231. Cutter, *L. j.* 4: 242; 6: 67. Richardson, *L. j.* 10: 212. Scudder, *L. j.* 12: 224. L. A. U. K. committee on a scheme suitable for general use, *L. A. U. K.* 4-5: 219-20; 6: 3, 176; 7: 3; 8: 4. Bradshaw, *L. A. U. K.* 4-5: 220. Bailey, *Lib. chron.* 3: 110. Fumagalli's Cataloghi, 133, 158-59 (in subject catalogs).

#### CLASSIFICATION BY SUBJECTS.

FOR.—Cutter, *L. j.* 3: 371; 4: 234-43; 6: 66. Dewey, *L. j.* 4: 117-20, 191-94. Perkins, *L. j.* 4: 29. Nicholson, Bullen, and Cutter, *Conf. lib. Lond.* 165-67. Wilson, *L. A. U. K.* 2: 79-84. Poole, *U. S. '76 Rep.* 492. Förstemann, *Central.* 1: 293-303 (on subj. catal.), and Uhlirz, *Central.* 1: 461-7. Kay in *Nineteenth century*, July, 1893, 101-9.

AGAINST.—De Morgan, Jevons, Fumagalli, already cited, and refs. in latter (but on subj. cat. see his Cataloghi, 125-76). Magnússon, *Conf. lib. Lond.* 164-66.

#### LOGICAL OR SCIENTIFIC CLASSIFICATION.

FOR.—Bliss, *L. j.* 7: 104, 251; 14: 240-42, 244. Kephart, *L. j.* 18: 240-42.

AGAINST.—Fletcher, *L. j.* 4: 244. Schwartz, *L. j.* 7: 229. Towry in *Bibliographer*, 5: 168; 6: 62. Fumagalli's Cataloghi, 140 *et seq.*

#### SPECIAL DIFFICULTIES OF CLASSIFICATION.

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#### CLASSIFICATION OF PARTICULAR SUBJECTS.

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BOOK ARTS. Cutter, *L. j.* 7: 168-72. Carr, *L. j.* 9: 172-75.

COUNTRIES. Cutter, *L. j.* 9: 115-16.

FAIRY TALES, *etc.* Cutter, *L. j.* 6: 67.

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HISTORY. Lomax, *L. A. U. K.* 3: 67-68.

HISTORY—*French.* (Monod's) Tedder, *Lib.* 1: 15-21.

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MATHEMATICAL SCIENCES. Lord Lindsay, *L. j.* 4: 150-52.

MATHEMATICS (Pure). Rowell, *L. j.* 17: 447.

NATURAL SCIENCES. Cutter, *L. j.* 5: 163-66.

PHILOSOPHY. Cutter and Larned, *L. j.* 10: 79-82.

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#### LOOSE OR CLOSE CLASSIFICATION.

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FOR CLOSE.—Garnett, *L. j.* 2: 198. Nicholson, *L. j.* 2: 268. Cutter, *L. j.* 3: 340, 453; 4: 240-41; 6: 66, 119; 10: 180-84, 403, 467; 11: 167, 180-84; 14: 153-54; 15: c100. Poole, *L. j.* 6: 122. Lane, *L. j.* 10: 260; 11: 352-53. Dewey, *L. j.* 11: 350-53. Larned, Biscoe, Richardson, and Coe, *L. j.* 11: 352-53. May, *L. j.* 12: 80. Cole, *L. j.* 12: 356-60.

#### FIXED OR MOVABLE LOCATION.

FOR FIXED.—Winsor, *L. j.* 6: 116.

FOR MOVABLE.—Cutter, *L. j.* 4: 234, 236; 6: 68-69. Poole, *L. j.* 6: 121-22, and *U. S. '76 Rep.*, 494.

#### SUBORDINATE ARRANGEMENT.

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ACCESSION. Dewey, *L. j.* 4: 120.

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#### Notation.

ON MIXING LETTERS AND FIGURES. Cutter, *L. j.* 7: 195-96.

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## LOAN SYSTEMS.

By MARY WRIGHT PLUMMER, Librarian Pratt Institute, Brooklyn.

**Definition.**—The charging or loan system is that part of a library's administration by which chiefly its communication with borrowers is carried on. The word *loan* applies to it because the books are lent, and the word *charging* because every library, no matter how small, with any pretense to method, has some way of keeping account of these loans.

**Requisites.**—The characteristic of a loan system best appreciated by the public is the speed with which it can receive and deliver books. The trifling annoyance of having to wait a few minutes for a book will drive many persons away from a library, and to a certain extent from the habit of reading. It therefore behooves the library administrators to consider speed when planning their charging system.

Another requisite is simplicity, not only because it implies speed and makes the work easier, but because it insures greater accuracy. The more complicated the system the greater the chance for error.

The third thing to keep in mind is that the less the borrower's part in the operation the better he likes the system. The library must be sure that it asks of him only the facts absolutely necessary to fill his order, and that any red tape should be kept behind the desk.

These three things, then, are essential, for it is certain that if there is more than one library in a place people will go to the one where they are most quickly waited on with the least trouble to themselves, and with the fewest mistakes.

A library, even a free library, is a business institution, and must keep a record of its transactions. It would be as absurd to keep no accounts in order to please the people and send them away sooner as it would be to enter no charges against the customers of a shop. The tangle that its affairs would soon find themselves in would be infinitely more troublesome to the borrower than the short time spent in waiting while the library recorded a few essential facts. It should therefore be taken for granted, in deciding on a charging system, that the public will be patient and reasonable if the library does not impose on it.

The library, if it keeps pace with the rest of the world, must know what it is doing. It is easy enough to hand out books day after day without knowing or caring whether more people are reading than this time a year ago, whether the best books are really called for, what the prevailing taste of the reading community is, whether people are gradually accumulating private collections of books at the library's expense, whether everyone is getting an equal chance at the popular books, where a book is that people keep calling for and that does not make its appearance, and a dozen other things that will occur to every librarian as details that he must know in order to be master of the situation. If libraries were conducted on the guesswork plan, librarianship would

deserve small pay and smaller honor, for an automaton could be constructed that would take in and hand out books, and learned pigs have been taught to pick out numbers and letters.

The charging system should, to a great extent, tell whether the library is really of use to the community, and in order to do this it must put the library in possession of certain statistics. The question is how to get these statistics at least cost of time and trouble to the public, with least expenditure of labor and least risk of error on the part of the library.

**Questions answered by charging systems.**—In 1882 the librarian of the Milwaukee public library sent to the *Library journal* the following list of 20 questions, answered by the charging system of that library. The questions in parentheses have been added in preparing this paper, in order to make these questions a basis for examination of various charging systems:

- 1 Is a given book out?
- 2 If out, who has it?
- 3 When did he take it?
- 4 When is it to be sent for as overdue?
- 5 Has the book ever been out?
- 6 How many times and when has the book been out?
- 7 How many (and what) books were issued on a given day?
- 7a (How many (and what) books are due on a given day?)
- 8 How many (and what) books in each class were issued on a given day?
- 9 How many (and what) books are now out, charged to borrowers?
- 10 How many (and what) books are at the bindery?
- 11 Has a certain book been rebound, and when?
- 12 What books have been discarded?
- 13 Does the circulation of a discarded book warrant its being replaced?
- 14 Has a given borrower a book charged to him?
- 14a (How many books are charged to him?)
- 14b (What books are charged to him?)
- 15 How many persons have now books charged to them?
- 16 Are these the persons who registered earliest or latest?
- 17 How often has a borrower made use of the library?
- 18 Has a borrower had a given book before?
- 19 What has been the character of the borrower's reading?
- 20 Is the borrower's card still in force and used?
- 21 (Has this person a right to draw books?)

The principle of the grouping given above will be readily understood to be a rough classification by book, date, and borrower's account.

It does not follow necessarily that the system which answers the most questions is the best, for they may be answered at an expense of time and labor out of all proportion to the value of the information. That is a point which each library must decide for itself. The college library, the free city library, the village library, have a widely differing patronage and quite as widely differing resources.

Loan systems may be roughly divided into four groups: Ledger systems, temporary-slip systems, permanent-slip or card systems, indicator

systems. There are many ingenious devices that belong to none of these, but they are used in so few libraries that they hardly merit the name of system.

**Ledger system.**—By ledger system we now mean a system in which books are used for recording charges. It is often taken for granted that in using a ledger the library keeps its accounts only under the borrower's name; but it is possible to keep trace of the books also, and even to keep the accounts by date. Originally the charges were made in a daybook, a simple daily record of transactions such as kept by any retail shopman. No doubt it was considered a great step in advance when the library began to post these daily entries in a regular ledger instead of looking back through all its charges till the one wanted was found.

The ledger account by borrower has the borrower's name for a heading and should have a page to itself in order that no two borrowers shall have the same folio number. The call number of the book and the date of issue are noted in pencil in columns or squares ruled for them, and when the book is returned the borrower's folio number, if he has forgotten it, may be found from the index at the back of the ledger, and the entry is either crossed off or the date of return noted, which closes the account till another book is drawn. The advantages and disadvantages of this method may be summed up as follows:

#### ADVANTAGES.

1. The entries can not be lost or mislaid.
2. The ledger takes up less space than the same information in any other form.
3. It can be handled rapidly.
- 4.<sup>1</sup> The borrower's previous reading shows and may help in making selections for him or prevent the second taking of a book by mistake.
5. It is easy to tell when a borrower's connection with the library ceases and how many live accounts there are on the book.

#### DISADVANTAGES.

1. Impossible to change the order of accounts to alphabetic<sup>2</sup> or other order to get at certain facts.
2. Pages, when soiled, can not be replaced.
- 3.<sup>3</sup> In the course of time an active reader may have several folio numbers, which would tend to confusion.
4. But one person can use the ledger at a time.
5. It is next to impossible to get at the delinquent accounts in order to send notices.

Applying the test of our 21 questions, we find that it answers easily 14-20, inclusive, nearly all, in fact, that apply to the reader; but with great difficulty, if at all, can the answers to 1-13 be found. By means of a daybook, questions 7 and 8 may be answered also. This gives the

<sup>1</sup> This advantage and this disadvantage may be found in some other systems.

<sup>2</sup> This necessitates an index to find the borrower's page while the card system is its own index.—M. D.

<sup>3</sup> This advantage and this disadvantage may be found in some other systems.



additional advantages that the charge is very quickly made, the posting being postponed to a leisure moment, and that the circulation of each day can be easily classified, footed up, and set down. This book, like the ledger, can be used by only one person at a time, and it can not be used for discharging debts unless the date be given as a key.

In the *Library journal* for 1883 a description is given of the method used by many Canadian libraries, notably those of the Mechanics' institutes, in which two ledgers figure, the one arranged by readers' accounts, the other by call numbers for the books, making book accounts. A daybook is used with this system, for the sake of speedy charging.

To the borrower the daybook charge is very likely to be satisfactory. He has only to give the call number of the book wanted and his name. The charge is dashed down and he does not need to wait. When he returns the book, his name or folio number refers to the charge, now on the ledger, which is crossed off or the date of return jotted down opposite it, and that is all. He knows nothing of the time and labor given to rewriting every charge, or the difficulties that arise each day from the fact that the library has no account with the book.

**Temporary-slip system.**—The inflexibility of the ledger system could not fail to be felt, and it has been superseded in many libraries by the temporary-slip system, of which a great advantage over the ledger system is that more than one person at a time can be engaged in charging and discharging books. The slips may be used exactly as the ledger pages are used to keep an account with the reader, the difference in that case being that the ledger is a permanent and the slip a temporary record. The slip may be written out by the borrower, in which case it serves as a receipt, or by the assistant for the sake of greater speed. It is usually required that the borrower's name or number, the call number of the book (or its author and title), and the date be written. When the book is returned and fines paid, if any, the slip may be destroyed or returned to the borrower. The slips may be arranged in a tray or in pigeonholes in any of three ways: (1) With guide cards or blocks for each day, making a daybook; (2) by borrower's name or number, making an account with the borrower; (3) by call number, making an account with the book.

The first arrangement has the advantages of the regular daybook as to speed, provided that all that is written on the slip be the borrower's name or number and the call number. The date is here not necessary, although it is well to have it lest a slip should by accident be taken from its compartment. The slip is then dropped into the tray in the proper date division, and the borrower goes away with his book. The disadvantage is also the same, that, without remembering the date, a charge can not be canceled. It would be possible to keep a ledger in connection with this arrangement of slips, as with the regular daybook. The questions answered would then be 7, 8, 9, 14-20. It has the advan-

tage over the daybook that after the arrangement by date the slips can be put in a subarrangement by borrower's number or call number, and that the dates once written on the guides do not have to be rewritten. The daybook, on the other hand, by the mere lapse of time, becomes a record of delinquents in such shape that it can not be lost, whereas the delinquent slips, in order to be quite safe, must be copied into a book after a certain period.

When the slips are arranged by borrower's name or number, they represent the borrower's ledger with its outstanding accounts only. As the slips themselves are usually of thin paper, it is customary to have cardboard guides, each bearing a borrower's name or number, or both, and when the charge is made the slip is dropped behind or in front of the borrower's card and remains there while the book is out. If the guides are arranged by borrowers' numbers there must be an alphabetic index to the tray, as the numbers are often forgotten. This system answers questions 9, 14, 14a, 14b, 15, 16. The questions 17-20, which are answered by the ledger system, can not be solved by any temporary record. The main advantage of this way of keeping the borrowers' accounts is the one mentioned above as pertaining to any slip system, that more than one person may work at it at one time. It requires more writing than the ledger, inasmuch as the borrower's name or number must be recorded. The difficulty of getting at the number of overdue books is quite as great, and if delinquent notices are sent the whole tray must be overhauled periodically. If these notices are sent only at long intervals, as in many subscription libraries, this is not so strong an objection as in the case of public libraries, which must send out notices daily. To the college library, or one that was watchful of its influence on various classes of readers, the fact that the record of a borrower's reading could not be kept would be a strong objection to the temporary slip system.

The third arrangement, that of keeping the slips in order of the call number of the books, has been seldom tried where the slips were for temporary use only. It answers questions 1-4, 9. The objection with regard to delinquent notices holds here, as in the previous arrangement. Any change in the character of the circulation within a given period would fail to be noticed by this system. Its main advantage lies in its speedy answer to questions 1, 2, and 3, questions which are more often asked, perhaps, than any other, and in its convenience when it becomes time to take the inventory. It is but fair to the last two arrangements to say that if the day's circulation is kept apart from the other charges till it can be classified and counted, one of the above disadvantages, the inability to discover changes in the character of the general reading, would disappear, and questions 7 and 8 could be answered.

In some libraries the slip is made large enough to serve for a list of books, and if handed back to the borrower when he returns one book may serve him to select another.

The late librarian of Princeton, Dr. F. Vinton, suggested in *Library journal*, 2: 53-7, that the slips, before being sorted in their pigeon-holes, be copied, in order to make two arrangements possible, one by borrowers and one by books. Whenever there is copying done, there is an extra liability to mistakes, and the writer suggests, instead, the use of the carbon copy used by many dry goods and notion houses to make duplicate checks for goods bought. Both entries would be in the same writing, made simultaneously, and if one was correct the other would have to be.

**Card system.**—The *card system* differs from the slip system chiefly from the fact that the cards, larger and more durable than slips, are kept as a permanent record. Aside from this, they are subject to the same limitation, admit of the same arrangement, and answer the same purposes as slips.

If but one kind of card is used by the library, it can be arranged with others to form an account with the borrower, with the book, or by date; and the same subarrangements possible with the slips are possible here. The advantages and disadvantages are the same as with the same arrangement of slips. With cards it is advisable to have ruled columns to keep the record. If the card is a borrower's card, the columns should contain the call number and the dates of taking and of return. If it is a book card, that is, kept in order of the call numbers, the columns should contain borrower's number and dates. Some libraries show the discharge of a debt by stamping or punching out the charge instead of stamping the return date, which is thus lost from the records. The borrower's card, kept by the library, answers questions 14-20, inclusive. By keeping the day's charges in a separate place till the end of the day's circulation, questions 7 and 8 may be answered. If a single card is a book card, it will answer questions 1-6, 13, 18, with 7 and 8 if the day's charges are kept apart and counted. If the book card is used, it may be kept in a pocket in the book when the book is in, or it may be placed in a separate tray at the desk to show what books are in and save useless trips to the shelves. Used in this way, it helps to form a card indicator, at the same time lessening the risk of loss of the card. If the cards of books out are kept in strict call-number order, without subarrangement by date, they may serve to indicate instantly the books out and thus fulfill the same office. The pocket for the book card is very generally used in libraries that have the book card. It serves for the borrower's card when the book is out, in case the borrower carries his own card, and lessens the risk of its loss. The labor of pocketing and repocketing, however, is considerable, and even aside from this, the writer questions whether for the library with few attendants the advantages from the card indicator do not outweigh those from the use of the pocket.

The card has an advantage over the slip, inasmuch as the library can obtain from it, according to the arrangement by book or borrower,



a record of the book's use or the borrower's reading. It is customary, in date systems, to have the date of taking written or stamped somewhere in the book, either on the pocket or on a date slip tipped into the book, to avoid the necessity of leaving the fact to the memory of borrower or assistant.

**Two-card system.**—We come now to the *two-card systems*, in which the cards are those of the borrower and of the book, the latter kept usually in date order. We shall take up first the system which allows (or obliges) the borrower to carry his own card and present it when he wants a book. This provision answers at once question 21, the presumption being that if the borrower is not the person presenting the card he has delegated his authority to that person by giving him the card. A system without any card carried by the borrower either causes the library to run the risk of giving books to persons who have no right to draw them, or, as in the case of the Apprentices library in New York city, must require a written order when a book is wanted and no book is returned for exchange, and compare the signature of the order with that on the register. The library with a small clientele runs no great risk in requiring no card of identification, as every borrower would be apt to be known at the library, but the city library, with its large and ever-shifting body of readers, must have some method of identifying them and the card is certainly the simplest.

The borrower's card for identification and the same as a part of the charging system are different things. For either use, the card should contain the borrower's name, address, number, and the date of expiration of his privileges.

There is a risk in making the borrower's card an essential part of the charging system when it is carried by the borrower, on account of the liability to loss; but if the facts noted on it serve simply as a check or to corroborate the record kept at the library, the question becomes simply one of economy of time and labor. The two-card system most widely used is probably that in which the borrower's card records the call number and date, and the book card the borrower's number and date. On the return of a book, the dating slip in it and the date on the borrower's card should confirm each other, the latter can be marked with date of return and handed back, while the book card can be easily found by means of the number in the book at any convenient moment, whether kept in strict call-number order or by date. When found, the date of return is noted on it, the card placed in the pocket or the card indicator, and the process is complete. It will be noted that very little of this has to be done in the borrower's presence. The question arises, of what use is the call number on the borrower's card, as it seems to be unnecessary in the checking off process. It gives, of course, a record of the borrower's reading, but as he carries it that is of no particular value to the librarian. It gives no clew to the book, if lost, as the card is generally kept in the pocket and lost with the book.

Some libraries dispense with this record, therefore, and save the time of writing. By doing this, the amount of writing before a book goes out is reduced to the date on the borrower's card, and the borrower's number and date on the book card. This item can be omitted, however, only in case the library allows but one book on a card. The question may also be asked, what is the use of the date on the book card, if it is already on the borrower's card and in the book, and the book cards are kept in date arrangement? One reason for this is that the book card is a record kept by the library, and the time of keeping a book is often a matter of interest in the gathering of statistics and a guide to a reader's thoroughness; another, that if a book card should get out of its compartment by accident, there would be no way of finding its place again if it bore no date.

By this system questions 1-9, 13-14, 17-21 are answered. Questions 10-12 may be answered by any system using the book card, provided the cards of books sent to the binder or discarded are kept in separate compartments in the charging tray, by order of their call numbers. It must be remembered, however, that the answers to questions 14, 17, 19, 20, and 21 are in the hands of the borrower and liable at any time to be lost. This system, with variations, is growing in favor among librarians, and has much to recommend it.

The *modus operandi* of the Milwaukee public library, the Apprentices' library of New York City, the library of the Boston Athenæum, and of the Buffalo library has been described in the *Library journal* with some fullness and will be found interesting and suggestive, but would occupy too much space if described here. Of the few card systems which are in use in English libraries, we may mention the system of the Bradford library, which is described in the *Library*, vol. 3: 390.

**Dummy system.**—The dummy system is an ingenious one for use in libraries with a limited constituency. Each borrower is represented by a wooden dummy, with his name and number on the outer edge. The sides are covered with paper ruled in columns. When a borrower wishes a book his dummy is taken from the alphabetic or numerical arrangement in which it is kept, the call number and date of issue noted on it, and it then takes the place of the book on the shelf. The return of the book gives the call number, the dummy is found and the charge canceled, the book returned to its place, and the dummy is ready for another charge and to take the place of another book. If there is a call for a book not in, the dummy shows who has it and when it is due. This answers questions 1-4, 9-9a, 15, when the borrower is using a book, and 14, 17, 18, 19, when he has no book.

**Indicator System.**—It is said that where the indicator is used for charging, as in many English libraries, the same method does not prevail in any two libraries; hence it is unnecessary to detail the various systems; they differ from American charging systems chiefly in making use of a perpendicular instead of a horizontal tray for the cards or blocks.

The indicator is a large wooden frame containing tiny oblong pigeon-holes, into which are fitted blocks, pegs, or cardboard slips representing the books in the library, or certain classes of books. On both ends of the block is printed the call number of the book, one end having a blue ground, the other a red one. By making the red represent books in, and the blue books out, the public can tell at once if a given book can be had and need not ask useless questions. The saving of time and labor, therefore, is greater than with the card indicator, where the assistant has to look through the cards in order to say if a book is in, but both devices save unnecessary journeys to the shelves, and the card indicator occupies less space. The use of the block indicator is confined, so far, almost entirely to British libraries. Where the indicator is used for charging, the block is superseded by a tiny book in which the charges are made, the top and bottom of the book being colored like the blocks referred to.

A feature that exists in some of the indicator systems and in many card systems is the movable date tray. The date register of the indicator has, for instance, 11 columns for books not overdue and one extra column for overdue books, and the date tray has 14 compartments for the former and one for the latter. These trays move from right to left. As to-day's circulation becomes yesterday's, its tray is moved one space to the left, while the fourteenth tray shows that all cards left in it represent books one day overdue. These are removed to the tray for delinquents, leaving the empty tray to be used for the day's circulation.

For a brief historical treatment of charging systems and the statistics of their use by United States libraries in 1889, see admirable report by H. J. Carr, in A. L. A. proceedings for 1889, pages 203-214.

For bibliography of charging systems from 1876 to 1888, see appendix to above report, or *L. j.*, 1889, 14: 213-214.

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(In her Western libraries visited by the A. L. A. party. *Lib. j.*, 1891, 16: 334-336.)

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## ELEMENTS OF LIBRARY BINDING.

By D. V. R. JOHNSTON,

New York State Reference Librarian.

Though the principles of library bookbinding are well known to librarians, a novice has difficulty in finding a usable statement of them. There are numerous good books on binding, but they are either text-books for the use of practical workmen or expositions of the history and artistic development of binding, written for book lovers and collectors. All these books are interesting and useful, but none of them give compactly just the information needed by practical librarians.

While the *Public libraries* report of 1876, the proceedings of the A. L. A., and the L. A. U. K., the *Library journal*, and other library periodicals and manuals contain nearly all of value on the subject, yet there are many partly conflicting statements which must be examined and some misstatements which must be corrected. Binding a book means not only covering it, but preserving it. As binding is always expensive, a careful librarian must see that he gets the best binding for the purpose for the least money.

Guard against extravagant or wasteful methods or habits of false economy, which are far worse. Good binding, even at a high price, has the advantages of educating public taste and promoting a desire to protect a library from injury and loss.

Cheap binding not only degrades books, but is actually liable to cost more in the end than good work. The labor expended on a book properly bound in half morocco, calf, or sheep should be worth about the same, and is not much less for a cloth binding, so that if unsuitable material is used, not only must it be replaced, but the labor, generally the most expensive item, must be paid for a second time. Each time a book is taken apart, scraped, cut, and rebound, it is more or less injured, and, if this is kept up, must in time be ruined. Strong, solid work and good materials are always worth their price, and 20 per cent added to the first cost of binding may often be regarded as insurance against further expense.

As waste comes from not using material suited to the purpose, and as the market is full of fraudulent materials, the beginner's first business is to inform himself carefully as to character, value, cost, and strength of all common binding materials.

The most important binding material is that covering the back and forming the hinges. This costs most, represents most labor, and has hardest usage, but must not wear out if the binding is to be preserved. It is therefore necessary to know what material is best for different uses, and what grades of different materials will give greatest service for the cost. All who understand this subject agree on morocco as best for a book which is to have considerable use, but is not to be worn out

in circulation. Morocco or goatskin has by nature a long, tough texture, and is supposed to be, and generally is, tanned by simple methods and not by modern chemical processes, so it will not only stand constant hard usage but will resist better than other leathers the corroding influences of heat, foul air, and gas. But moroccos vary widely in quality and price, and are so cleverly imitated as to deceive even the best informed. Not only is it often hard to tell imitations from genuine morocco when in books, but still harder to tell the different grades of morocco from each other, so the only way that the inexperienced can keep from being cheated is to employ honest binders.

That only the best morocco should be used is not strictly true. Use the best for each purpose; but the same thing is not best for all uses. The best morocco is Levant, costing from \$42 to \$60 a dozen, or from \$3.50 to \$5 a skin. This is about 50 to 65 cents a square foot, or about 20 to 30 cents for each half-bound 8°. Though Levant is not only the handsomest morocco, but will outlast all others, its use in a library is generally counted extravagant, because its endurance is not proportionate to its added cost. Some few librarians, however, believe otherwise, and continue to use Levant.

The morocco best suited for library use is the grade known in the market as "Haussmann" or "genuine morocco," which costs, according to size, thickness, and finish, from \$18 to \$33 a dozen, or from \$1.50 to \$2.75 per skin. All this grade of leather is good for some kinds of work, but usually that costing most is most enduring and hence cheapest. Morocco which costs from \$26 to \$33 a dozen, if it is of proper finish and thickness for good work, will cost just about the same per square foot, from 38 to 40 cents, the difference in price representing the difference in size only. Since the smaller skins are always open to suspicion as to their general quality and usually give more waste, those costing from \$30 to \$33 per dozen are preferable, unless for some special reason. A \$2.75 skin measures about 7 square feet, so this leather approximates 40 cents per square foot, or from 13 to 15 cents for a half-bound 8°. As price of leather, size of skins, size of books, amount of waste, etc., are variable, all binding figures are approximations.

The cheaper grades of "genuine morocco," costing from \$18 to \$24 per dozen, are smaller and thinner skins, and can be used to advantage only on small books having no hard use. This leather costs about the same as the better Persian morocco described below, but for most purposes is better.

Persians in common use usually cost from \$15 to \$20 a dozen, though they vary from \$10 to \$24. The better grades of this skin are about the size of the cheaper grades of "genuine morocco," and average about 6 square feet, though some of the very best are as large as Haussmann skins. Averaging ordinary sizes and prices of Persian morocco, it costs about 20 to 25 cents a square foot, or, approximately, from 8 to 10 cents for each half-bound 8°.

There seems to be little use for Persians, as only the better qualities, which overlap in price the cheaper grades of "genuine morocco," can be trusted. Librarians in this country who have tried it do not report it satisfactory, though English circulating libraries, like Mudie's and Smith's, now use considerable of it. Persian, though looking and wearing pretty well, is more apt to fade than "genuine morocco," and on exposure to heat sooner becomes hard and brittle. The lighter shades are apt to streak and scratch, so that the darker shades only are commonly in market.

There are other grades of morocco, at from \$6 to \$12 a dozen, but the skins are very small and thin and have no place in library work, and indeed are very little used for binding.

The so-called French and German moroccos, \$15 to \$18 a dozen, or about 7 to 9 cents for a half-bound 8°, are not much used in this country for library binding, though many imported books are bound in them. While most, if not all, this leather is made from sheepskin, yet it is often so well tanned that it will wear nearly as well as Persian, and European binders do not hesitate to advertise it under that name. It should, however, be avoided.

Another imitation of morocco made from Persian sheep is known as bock. It is a small skin, costing \$9 to \$11 a dozen, or from 5 to 7 cents for a half-bound 8°. It wears scarcely better than good roan, and is a dangerous imitation, because it is hardly distinguishable from morocco on newly bound books. A considerable number of libraries, however, still use it.

Other imitations of morocco are often made from common sheepskin, buffing, and other leathers, but as a rule they are not hard to detect. They are all bad.

J. B. Nicholson (Manual on the Art of Bookbinding, Phil., 1856, p. 16) says that "there are in the British Museum books in calf supposed to have been bound in the time of Henry VIII." Whether this is true or not, certainly no calf binding done to-day will ever reach such antiquity. Calf in private collections is one of the handsomest of bindings, but for library purposes it must be condemned. Grades commonly used cost from \$21 to \$29 a dozen, and the cost per book of the different grades is almost the same as for morocco. As it requires careful handling in the bindery to keep it from soiling and needs extra finishing, the cost of calf work is apt to be still higher in proportion.

Aside from cost, calf has many faults. It becomes brittle and wears out at the joints; it is reduced to powder by heat and gas, so that volumes will often break their bindings by their own weight, and on account of the even, close grain it is easily soiled and scratched. Though these bad qualities are generally admitted, some librarians still prefer to stand the trouble and expense of using it rather than change the binding on long and handsome sets, and some contend that it is a good leather for circulating books, as it does not rot when in con-



stant use. All having to do with law books regret that full calf bindings are so largely used by British and colonial law publishers, as this style of binding is very dear, and yet hardly more useful than ordinary half-law sheep.

Sheepskin, too, whether as black sheep, roan, or skiver, ought to be avoided when possible, as it is thoroughly unreliable. Roan costs from \$8 to \$11 a dozen, and varies much in durability and according to no known law, except that black and very dark leather is apt to be poorest. Skivers, or split roan, cost from \$5 to \$9 per dozen, and vary in strength from paper upwards, the best being more lasting than some roans. Skiver of course can only be used on very thin books, but even on them cloth is much better if the book is not worth a morocco binding. Likewise it is well to substitute morocco or duck for roan on much-used books, or cloth if the book will spend most of its time on the shelves, as roan will stand neither the effects of usage nor of time.

Law sheep, \$6 to \$12 a dozen, and law skiver, which costs the same, though standard bindings for law books and public documents, and in considerable use for other purposes, are thoroughly bad, as they look mean, wear poorly, and are dirty to handle. Their use in libraries should be curtailed as much as possible, specially as substitutes are easily found that look and wear better and cost less.

Without a doubt, better sheepskin than that now in market could be made. Sheep and even skiver bindings used for forty or fifty years are not uncommon, and the old sumac-tanned sheep was really an excellent binding, but the sheepskin now sold is hopelessly bad. Skiver, sheep, and roan are worth from 7 to 10 cents per square foot, or from 2 to 2½ cents for a half-bound 8°.

Another bad leather is russia, but as it is expensive, costing from \$3.50 to \$6 per skin, according to size, it is not much used. It is stronger than calf, but, like it, wears out at the joints and crumbles under action of heat and gas. The theory that its peculiar odor protects it from worms has been long ago exploded.

Much better than genuine russia is its imitation, American russia. It is made from cowhide, and is a good, strong leather, the best next to morocco. American russia costs from 12 to 18 cents a square foot when plain, or from 16 to 24 cents a square foot when grained to imitate morocco, seal, or other leathers. This is about 3 to 6 cents for each 8° book for plain, and 4 to 8 cents for the fancy kind. Buffing, or split American russia, costs from 5 to 10 cents a square foot, or from 1¼ to 2½ cents per 8°. The durability of this leather depends very much on its thickness. When thick it can be used on maps, newspapers, etc., with good results, though better results can be had for less money from duck. For a cheap leather binding American russia is preferable to roan or sheep, and indeed will wear better than any other leather except morocco. For law books, public documents, etc., American russia of almost the exact shade of law sheep can be had which will

wear far better than sheep and cost not more than 2 cents a volume more than half sheep.

Pigskin now in the market costs from \$7.25 to \$11.75, according to size, quality, and finish. It has a handsome finish and a grain quite as good looking as morocco. As a pigskin is from two to three times larger than a genuine morocco, the price per square foot is about the same. It is an intractable leather and requires careful handling to make it look well in a book. It tends to harden and become brittle if not handled often, and is suspected of mildewing, so it seems unwise to bind in it for general use. However, it seems a very good if not the best material for table books, such as dictionaries, catalogs, etc., as it stands rough usage without scratching or becoming shabby.

The use of buckram in this country has never been large, and many librarians who have experimented with it have given it up. It is not at all cheap, as it costs 35 to 50 cents a yard. It is hard to work, as it takes glue and gold badly. On exposure it becomes brittle and is liable to fade like any book cloth. Linen buckram, the highest priced and best, has been practically unknown to the American market from the first, though, as it is hard to tell it from the cotton cloth, the fact is not generally known. Wherever buckram is used duck will answer most of the purposes at less cost, as it is worth only from 10 to 20 cents per yard. Duck is easily worked and possesses all the requirements for a strong, cheap binding suitable for circulating libraries, oversize books in little use, maps, and newspapers. On the other hand, duck is rough, ill looking, and will not take gold lettering well; and as it is not wise to letter on labels, one is limited to shades light enough to show ink lettering and dark enough not to show soil. Since the friction of duck is great, it is always a good plan to bind very large volumes in half duck with paper sides. The use of half duck on smaller books is growing in favor.

Books having infrequent use, if not oversize, will last quite as well in cloth as in leather. Book cloth, costing from 12 to 20 cents per yard, will answer even better than expensive morocco, since heat and gas have no effect on its vegetable fiber. Remember, though, that cloth work is generally case work and will not stand much wear.

The use of vellum in this country has so far disappeared that no data regarding it can be obtained. Some of the English binders claim to use it with satisfaction.

When binding in leather avoid both very light shades, which are most expensive and will not keep clean, and very dark, specially black and very dark green, which may be tender. Skins which are failures in lighter shades are often re-dyed black, and this tends to rot the leather. The best colors are the lighter browns, red, light greens, olive, blue, and maroon.

Bindings should be pleasing to the eye and sufficiently diversified not to rob the books of their individuality. But as it is annoying to choose



a color for each book and to have innumerable styles which must be matched, different color schemes have been devised and used by different librarians, some assigning colors to subjects, some to languages, etc. None of these schemes are without objections, and none are in common use.

Reports of societies, institutions, etc., should be bound by regular periods, such as decades or semidecades, as they are more useful in such condition. Pamphlets when bound should be flush at the top so as not to gather dust. Some larger libraries bind covers of periodicals, pamphlets, and books issued in parts, some placing them at the end of the volume and others binding them in their original order. The custom, too, is gaining favor of binding half titles, advertising leaves, etc., with the covers. This custom is not indorsed for any but very large reference libraries, as it materially adds to the expense; but for them it is strongly recommended. The public have the right to expect that a library maintained in part for collecting and preserving records of human thought and action will not neglect to preserve in original form the issue of the contemporary press; and a proper regard for the future demands the preservation of all the printed matter possible.

**Sewing.**—To secure the best results in sewing—to gain strength and flexibility—the book must not be deeply sewed, and every fold of more than four leaves should be sewn “all along” whenever possible. If, however, a smaller thread must be used in sewing all along to produce the correct swell to the back, it is better to sew “two on” or alternately with a stronger thread. Hayes’s Irish linen thread, costing from 90 cents to \$1.10 per pound, will give best results. Every volume above a 16mo should be sewn on at least three bands, and this number should be increased according to size and thickness of volume. The thread in all cases should always completely encircle each band, not simply pass over or under it in a loop. The first and last signatures should be overcast or whip-stitched, or sewed with a sewing machine.

All maps and folding plates in books which have much use should be backed with muslin, but as this costs 6 cents apiece, for less used books a muslin joint at the fold can be used, costing only about a third as much. All plates, however, in large volumes should be mounted at least on a cloth guard, or they are apt to be crumpled or torn.

Books which are sewn on tapes, parchment strips, or other raised bands, last better and open more freely than others, with the added advantage of not being deeply sewed. Some suppose that they are not sewed at all, but as a rule a shallow cut is made on each side of the band to guide the sewer.

Raised-band sewing not being generally practiced, and sewers being unskilled in doing the work, it is apt to be expensive, sometimes three or four times the price of ordinary sewing. But if raised-band sewing were more common there seems to be no reason why the cost should



be more than 5 or 10 cents a volume higher than good band sewing. Outside the large cities almost the only place where tape sewing is practiced is in certain blank-book binderies, and such places, as a rule, do not do good library binding.

In spite of the added cost, books having the most frequent use should be sewed without sawing or on raised bands. On books of music, volumes of maps, plates, manuscripts, and other works which should open with the greatest freedom, tapes should be used.

Tapes are not generally laced into boards, but are glued on the inside of the covers, so in this respect band sewing has the advantage as the bands can be laced completely through the board, thus giving the book greater strength.

Every book, if bound for use, should have vellum corners, which, if properly put on, is a great protection in case the book is carelessly dropped, as it will dent the wood of the floor rather than break. These corners should be carefully skived down so as not to make a projection against which the siding will wear itself out, and should be not less than 3 cm. long on a book larger than a 12mo as, in case of a fall, a small corner will help break off the board inclosed by it. There should be no added charge for vellum over leather corners, as scrap vellum is large enough for this use.

Whether tight or loose backs are the better is hard to determine. The latter are used by most American libraries, presumably for good reasons, while the former are recommended by nearly all binding experts. In a tight back, the leather being fastened to the back forms part of the book itself, binding it close at every point and acting as a hinge joint at each place where the book is opened. In a loose back, the leather is hardly more than a connection between the boards, the first linings being all the support to the back; hence, at the joint at the edge of the board there is a constant strain which must result in breaking the cord if the book is in frequent use. Unless a tight back is well made it will not wear smoothly nor open freely; but when the work is well done it will outlast a loose back and will open very nearly as well. A loose back looks better, especially when finished with false raised bands, but as these bands add nothing to the strength of a book, and may even weaken the leather, their use is inadvisable.

The cost of finishing the tops and edges should be reduced as much as possible, as all that is needed is to protect the top from dust. Burnishing with agate at a cost not exceeding 1½ cents a volume will do this almost as well as gilding, which costs from 10 to 20 cents a top, or marbling at from 3 to 5 cents, or coloring at about 10 cents per volume. In finishing the back all tooling and ornamentation should be eschewed, except perhaps plain gilt cross lines and blind tooling to divide the back into panels, and perhaps a plain gilt fillet where the leather and sidings join. The lettering should be in plain Roman capitals and

Arabic numerals, large enough to be easily read, and should be stamped on the binding and never on labels, which are liable to come off. Use of old English, German, or other fancy types, punctuation marks, and Roman notation, is confusing to the eye and should not be allowed. It is a great convenience to have the lettering always in the same relative position, and the following arrangement is recommended: Name of author in top panel, with initials if needed; a brief comprehensive title condensed from title-page if possible, in the second; editor, translator, or commentator, if necessary, in the third; and the year, whole number of the volume, the series and series volume, in the order mentioned, without prefixing v., vol., band, etc., in the fourth. Rarely, as in newspapers, it is well also to add the months. When books are bound together put the author of the leading book in the top panel and its title in the second, and the author and title of the second book in the third panel. When books have permanent class and book numbers they should be gilded on the bottom panel in 8° and smaller volumes, and in the top of the first panel of larger volumes. Lettering costs only from 3 to 5 cents per line, and the saving in time and trouble spent in constantly replacing paper numbers will warrant the outlay.

Paper sidings are ordinarily most satisfactory, cost 2 or 3 cents less than cloth and wear almost as long. They give little friction on the shelves, do not curl at the edges, fray at the ends, nor blister with moisture, as will cloth. Moreover, paper when worn out can be more easily replaced. Full leather work, except in rare cases, is very costly, and having no advantage has no place in a library.

Cost of binding varies so much in different places and with the style and quality of work, that it is hard to give reliable figures. According to the answers given to the binding circular sent out by the comparative library exhibit, an 8° binding costs in—

Boards.....	\$0.08 to \$0.25	Half russia .....	\$0.95 to \$1.00
Muslin.....	.25 to .85	Half vellum .....	2.00 to 3.00
Duck .....	.25 to .90	Half pigskin.....	.50 to 1.50
Buckram.....	.40 to .65	Half calf .....	.60 to 1.20
Half skiver .....	.50 to .55	Half buck .....	.50 to 1.00
Half sheep.....	.30 to 1.00	Half Persian goat.....	.37 to 1.25
Half roan.....	.25 to .90	Half Turkey morocco....	.40 to 1.50
Half buffing .....	.28 to .90	Half grosgrain morocco ..	.95 to 1.50
Half American russia ....	.40 to 1.00	Half Levant morocco ....	.75 to 2.50

For other sizes there is quite as much difference and clearly no practical use can be made of these figures. Judging from the actual cost of work in the New York State library bindery and from the prices for which work can be done by contract in New York State, it would seem that work, according to our specifications, in which all grades of work

are as thoroughly sewed and carefully forwarded as in the best morocco (except that muslin binding is case work), is worth as follows:

Size.		Half morocco.	Half duck.	Cloth.	Half law sheep or American russia.
Symbol.	In centimeters.				
F	30-35	\$1.50	\$1.25	\$1.00	\$1.35
Q	25-30	1.20	.95	.70	1.00
O	20-25	.95	.70	.60	.75
D	15-20	.75	.60	.50	.65
S	15-17.5	.60	.45	.35	.50

While in parts of the country, owing to competition and other causes, binding prices have gone down within the last few years, yet, as in most European countries the cost has risen in spite of competition, we have no reason to expect that work will ever be much cheaper here than at present.

Of foreign work the French is cheapest and most satisfactory. English binding, when in morocco, is excellent, specially in the forwarding; and German work, while sometimes not so good as either of the others, is now generally good, and is certainly an advance on that of a few years ago.

The cost of binding an 8<sup>o</sup> in half morocco is, in London, 3s. 6d. [84 cents]; in Leipzig, 2m. 25pf. [56 cents]; in Paris, 2f. [40 cents], so money can still be saved by having books bound abroad.

The temptation to start a bindery in a library is often very great to anyone familiar with the cost and character of good work. Good binderies and fair prices are not common even in large cities, and in places remote from these centers bookbinding is either crudely done or is charged for at fancy rates.

A library wishing first-class work of all kinds will almost certainly lose money by doing its own work, if its binding account is not more than \$2,500 per year, and if it expends from \$2,500 to \$3,000 it will still be on the doubtful list, but on larger sums it should make money. Success depends entirely on a proper subdivision of labor, and no bindery can hope to make a profit if it has not work for at least three hands. The experiment has been thoroughly tried, and enough data have been collected to show that none but large and rapidly growing libraries can expect to run a bindery at a profit, and that even these can hope for only small financial gain.

One great exception to this rule should be noted. Some of the rapidly circulating libraries in large cities, where books are bound for constant use, and with the expectation that many will wear out in service, have found that they can save money by doing their own work when their binding bill is no more than \$1,000 or \$1,500 a year. Not requiring good workmanship, cost of labor is low, sometimes less than \$900; and by binding in duck, buffing, and other cheap materials, often using the old covers, the cost of stock is kept down, sometimes below



5 cents a volume. They find that in binding 3,500 volumes or more they can save money. This kind of binding is suitable for this purpose, but has no place in a library which binds for preservation. In that the case is different. Suppose you have your plant, which will cost from \$650 to \$800, all paid for, and are willing to leave out of calculation the interest on both plant and stock, cost of light, heat, bookkeeping, insurance, etc., and you expect to do \$2,500 worth of work a year. You will require a finisher at \$20 a week, a forwarder at \$12, and a sewer at \$6, so in round numbers the labor will cost \$1,975 a year. But the stock used in doing this work, if conditions are the same as now exist in the New York State library, will cost from \$575 to \$625, so that total cost will be from \$2,550 to \$2,600. If, however, you do \$3,000 worth of work, you may require another hand, an apprentice at \$4 a week, which will make your labor cost in round numbers \$2,185, and the stock will cost from \$690 to \$750, so that the total cost will be from \$2,875 to \$2,935.

These approximations, deduced from practical experience, are meant to represent in all cases the highest cost and most disadvantageous circumstances. The indirect advantages, however, are many and valuable: Safety, convenience, saving of time, certainty of having work done as wanted, and the ability to have work done outside at figures much lower than binders would give if they did not have to compete with your own. These advantages are not to be disregarded or underestimated, but if direct money gain alone is to be considered it can not be looked for in a library bindery.

#### SCHOOL AND COLLEGE LIBRARIES.

By GEORGE T. LITTLE,

Librarian of Bowdoin College, Brunswick, Me.

The object of school and college libraries is to aid in the education of a limited number of persons. This aim separates them in a measure from public libraries and alone justifies the attempt to treat in a single chapter of the administration of collections varying in size from 300 to 300,000 volumes.<sup>1</sup>

No institution of learning can live without books. No group of students, whether young or old, can grow in knowledge without access to a library. This library becomes for the time being an agent in their education. Like any piece of school apparatus it may bring injury by misuse, lose its value by neglect, or, well managed, produce results beneficial beyond anticipation. In any case its purpose remains the

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<sup>1</sup>The plan assigned to this paper excludes alike a statistical account of the present condition of school and college libraries, and an historical statement of their remarkable growth during the last eighteen years and of the striking changes in methods. Any occasion for the former is largely met by Miss Lodilla Ambrose's comprehensive paper entitled "A study of college libraries," published in *Library Journal*, 18: 113.

same. It is there to supplement and make real the instruction given by text-book and teacher. So different, however, are its methods of working in schools of different grades and among students of different attainments, that at the outset a rough distinction must be drawn between the school, the college, and the university library.<sup>1</sup>

**School libraries.**—The school or academy library should be operated by the teachers without a professional librarian.<sup>2</sup> It should be limited in size. It should require no catalog besides a simple shelf list. Each teacher should know its contents. Its volumes should be selected with the utmost care.<sup>3</sup> The best and only the best should be the motto. It should contain every reference book that the ingenuity of the instructor can get his pupils to consult with profit. Duplicates, and even tripli-

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<sup>1</sup> Recent thought refuses to treat "college" and "university" as synonyms, and differentiates as sharply between college and university as between high school and college. The college course proper begins where the high school leaves off and completes the gymnasial training which should precede the purely elective study and research of the university, or the direct preparation for duty given by professional and technical schools. The word university, instead of being loosely used as a synonym for college, or as referring to a group of professional and technical schools, properly refers to an institution which in faculty, libraries, laboratories, material equipment and endowment offers facilities for exhaustive scholarly research of that type for which a complete college education with its thorough gymnasial training is assumed as the necessary preliminary. Thus the eight years' gymnasium training is divided into the four-year high school course followed by the four-year college course. In fact, however sound this theory, few American colleges fit these proper definitions. Of the 450 alleged colleges and universities, perhaps a majority are doing more or less high-school work, not really requiring the four years of preparation. Of the better institutions, a large number, instead of beginning as they should where the high school leaves off, require a year or more of further preparation for admission. Not a few, however, carry the college work over by a year or more into the proper university field. Then the word has in the past been so indefinitely used that many colleges are of much higher grade than many other institutions which have taken the name university.

In reading this paper, therefore, the academy and university library may be clearly understood, but the theory of the college library will depend on what the college means. If by strict definition it is the last four years of a gymnasial course, it will resemble the academy library more closely. If, however, as most laymen assume, it is really an undersized university, then the ideals for the university library should be the guide and be modified and reduced to fit this conception. All will doubtless concede however that a sharp distinction exists between academy and college library; that the former is for the older school children, while the college library treats its readers as adults. Between high school and college seems to run the line that separates the boy from the man in education, though he attains his legal majority some three years later, or about senior year.—M. D.

<sup>2</sup> The words school and academy are here used to denote an institution occupying a single building for educational purposes, in which pupils spend several hours of the day in study and recitation. It is obvious that the libraries of certain normal schools and of old and well-endowed academies with advanced courses of study are not to be limited either in the way or to the degree essential to the success of libraries in city schools and country academies, where with difficulty a single room is secured for them.

<sup>3</sup> The use to which such books can be put is well set forth in *Library Journal*, 8: 24.



cates in some cases, of the most popular and useful of these must be supplied. Waiting one's turn after school to consult Webster's dictionary will destroy the efficiency of the library for the ordinary academy scholar almost as much as the absence of that work. It should contain an abundant supply of what may be termed collateral reading: i. e., popular and instructive books relating to every part of the curriculum. These books should be bought only on satisfactory evidence of their being adapted for the work in question. They should be alluded to and quoted by the teachers in their recitations; they should be personally recommended to different individuals, and, in general, circulated as widely as possible among the pupils. When a volume is found to be both instructive and specially interesting let there be no hesitation in procuring duplicates. More is accomplished by five copies of a good book that finds its own readers than by ten good books that must be helped to an audience.

The school library should be classified by some simple system. The appreciation of the distinction between general books of reference, books on history, on science, of general literature, is the first step to their correct use. The growth of the collection, moreover, must not be allowed to interfere with those material conveniences which make the use of books easy and afford the charm that so often characterizes the private library—spacious tables, a broad window seat, comfortable chairs. Better an extra easy chair than an extra case of government documents. But it must grow. Nothing will injure its efficiency more than lack of new books. New editions of standard works of reference must be secured. Rees's Cyclopedia was a most valuable work in its day. Its presence now in a school library of 2,000 volumes will rightly cast suspicion on the entire collection. New books for collateral reading should be constantly added. Whenever the book of the day about which everyone is talking happens to be fitted for this purpose let it be secured without delay. The addition of one such book may give the library an importance and influence in some quarters that it has hitherto failed to gain.

One characteristic of the school library sharply separates it from the majority of public libraries. Its growth is limited by physical considerations which can be overcome only at great expense and with doubtful profit. Constant accessions must not convert the reading room into a book stack. In a word, the duty of withdrawing books when the collection is in danger of becoming unwieldy is as great as that of care in selection at the outset. The task is difficult, but quite feasible.<sup>1</sup> Take care that some large library in the neighborhood has a copy of each volume to be discarded. Then withdraw promptly old editions of reference books and duplicates no longer used, and cautiously that large class of

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<sup>1</sup> The advantages are greater and the difficulty less in high school than in public libraries, but even here the greatest caution must be exercised, the only safe rule being that in all doubtful cases the books shall not be withdrawn.—M. D.



books, excellent in their day, but less popular than their younger rivals; e. g., remove Mrs. Mann's *Flower People* to give place for Miss Harris's *Wild Flowers and Where they Grow*.<sup>1</sup>

These few sentences, though relating to concrete matters, perhaps explain sufficiently the special field of the school or academy library. It should enable the teacher to round out the instruction of the recitation hour by referring the pupil to standard sources of information for answers to the questions that naturally arise; and, what is alike more important and more difficult, it should enable him to rouse and maintain an interest in the subject studied by attractive and entertaining collateral reading. Its efficiency, however, depends largely not only on the hearty cooperation of the teachers, but also on the time and thought which they can devote to it. With the simplest possible organization much care and labor is needed to keep the collection in order. This often makes it wiser not to form a special library and to depend on the public library of the place, specially when this is conducted according to advanced and liberal views. Each room will still require certain books of reference, but in place of a collection from which shall be drawn the reading matter for the entire school, each teacher should be encouraged to call on the public library for the books required to illustrate his teaching. The various methods of bringing about this helpful relation between the two great educational forces in the community are fully set forth by Miss H. P. James in the article on "Libraries and schools" (see p. 693).

**College libraries.**—While the college library accomplishes much that has been allotted to the school library, its aim is distinctly broader and higher. Its instruction is confined to no curriculum. It answers all questions. It should teach alike the wideness of human knowledge and the interdependence of its various departments. While the school library does its work well with 2,000 volumes the college library may require 50,000. These are to be selected carefully and systematically, though not with that painstaking exclusion of all save the best which characterized the building of the former. A sprinkling of second and third rate books will help rather than hurt. For having in school learned to put his trust in books as the source of truth, the pupil is to discover in college how untrustworthy and contradictory a source some of them are. The varying factors of the purpose and the prejudices of their authors must be brought to his attention and he must discriminate. In other words, he must learn to think, the best lesson a college course can teach. The ability to comprehend different statements of fact, to weigh the value of differing opinions and to form an impartial judgment as to the truth, means success in after life. The college library is the workshop where this trait can be developed and trained.

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<sup>1</sup> For discussion of this weeding-out process for town libraries see S. S. Green's chapter on "Adaptation of libraries to constituencies," p. 698, and the note as to the serious objections to the plan.—M. D.

It should, therefore, be encyclopedic in its range and impartial in its selection. It is as unwise to exclude the Bridgewater treatises as out of date as to reject Haeckel as atheistic. There must be constant effort both to secure as soon as possible an authoritative statement of each recent advance in knowledge, and to keep on the shelves the best compends and popular presentations of each department of religious, natural, and social science. Too often this completeness is sacrificed either to the inordinate demands of a few instructors or to a striving for mere numbers. It is pitiable for a college library to say as loudly as books can speak, "We care for nothing here save philology and political economy;" or to find another that has existed half a century, numbers as many thousand volumes, and yet can not supply material for a course of reading in the national literature.

**University libraries.**—If the college library teaches scholars, the university library teaches teachers. While it is able to do the work of the two classes just mentioned, the function that separates it from them is the aid it renders to original research. It is an engine by which new truth is discovered. All knowledge is its sphere, whether that knowledge has been digested in books or not. Hence the university library is often called on to expend as many thousands on periodicals alone as the college library devotes to books and periodicals. The investigator must both stand on the past and be abreast with the present. The university library is not only warranted in storing away every bit of the printed thought of bygone days it can obtain, but is also forced to be constantly seeking the latest tidings from workers in widely separated fields. It must be catholic; it refuses no gift; it counts nothing trash. The college library may, the university library must, have departmental libraries. It must not only duplicate many of its books, but be so well organized as to place at short notice all of its resources on any topic in a departmental library or a laboratory for the use of the investigator and as readily withdraw to the central storehouse what is no longer of service.<sup>1</sup> The general public, too, has its claims. As the ideal university professor stands for the advance of truth in his department, and answers honest inquiries from the outside world as readily as those from his lecture room, so the university library should place its treasures at the disposal of any intelligent seeker after knowledge whose questions can not elsewhere be answered.

#### COLLEGE LIBRARY ECONOMY.

Despite these differences, it is often difficult to assign the library of a particular college to any one of these classes. It may be gradually growing out of one class into another, or by reason of special circumstances may have assumed additional functions. With an enterprising

<sup>1</sup>On the method of accomplishing this, consult Willard Austin's paper on reference, seminary, and department libraries at Cornell University, in *Library Journal*, 18: 181.



principal the library of a country academy may well supply the place of a village circulating library of high grade. A college library is sometimes called on to do the work of a State historical society. The existence close at hand of endowed libraries devoted to special branches of knowledge justifies a university library in neglecting its development along those lines. In every case, however, these three classes of libraries are collections of books which must be obtained, recorded, arranged, consulted, and circulated. The methods employed in accomplishing this will not in most details differ materially from those pursued in the ordinary public library of similar size. It is proposed, therefore, to mention only those points of library economy which either in themselves or in the degree of attention to be given them demand the special consideration of the college librarian.<sup>1</sup> Unless otherwise specified, the following statements refer in general to institutions having from 30,000 to 60,000 volumes and purchasing from 1,000 to 2,000 annually.

**Selection of books.**—This task, the more important the more limited the means, is divided between teachers and librarian. Through a library committee, of which the librarian is the working member, a rough division is made among the departments of the amount available for buying books and periodicals, a considerable part being reserved for special purchases and possible contingencies. Books are then formally recommended from time to time by the various professors and bought to the extent of the appropriation. The librarian should assume the duty of selecting books in departments not claimed, or, as occasionally happens, neglected by the faculty. He feels most keenly any deficiency of the library in standard works, either of reference or in general literature, and is, therefore, the one who should endeavor gradually to supply this lack.<sup>2</sup> It sometimes becomes his duty to check an otherwise exemplary teacher who persists in ordering only what is of service to himself, ignoring the needs of the student body. The bane of a small college library is an ambitious specialist allowed to have his own way.

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<sup>1</sup> The writer has had the privilege of examining the replies to an extended series of inquiries, prepared by Charles E. Lowrey, librarian of the University of Colorado, and relating to every detail of college library administration. His regret that the space at his disposal will not allow the insertion of even a digest is lessened by the hope that a full statement of them may be printed later.

Many valuable suggestions can be obtained from the annual reports of Melvil Dewey, librarian of Columbia College, 1884-88.

<sup>2</sup> The principles governing selection of books are outlined by James M. Anderson in *Library Journal*, 2: 150. A full and logical statement of the class of books a college library should contain is given by Otis H. Robinson in *Library Journal*, 6: 96. See also the latter part of Justin Winsor's article in *United States Bureau of Education*, Circular of Information No. 1, 1880, "College libraries as aids to instruction." This pamphlet, invaluable to every college librarian, touches on many of the points considered in this chapter, and is here cited once for all.



It may seem superfluous to add that each college library should possess all publications of the institution itself and works of its alumni. Unfortunately, the experience of the older colleges shows the danger of delay or neglect in this direction. Great pains must be taken and patience exercised to give to this department the special value that comes from completeness.

Hardly less important than the selection of books is that of periodicals.<sup>1</sup> Generally the demand of the progressive members of the faculty for serials in their departments is far in excess of the means to supply them. Each department should have some of the material needed in keeping abreast with discovery and research in that line. At the same time it is incumbent on the librarian to guard against such an expenditure on publications giving tentative results and preliminary sketches as will prevent the library from procuring the monographs digested from this mass. These latter will continue serviceable long after the journals themselves have become useful only in studying the history of the science. The college library, being debarred by its income from attempting to cover the entire field, should take, first of all, representative periodicals in English sufficient to enable the student body to keep in touch with the subjects of the day, adding, if possible, one general or literary periodical of France and of Germany; then it should endeavor to supply the wants of its professors, having regard more to the use likely to be made by the various departments than to an impartial division among them.

It is rarely the case that cooperation can not double this material with but slight increase of expenditure. Most teachers will be willing to take personally some periodical that the library can not afford, and frequently will put this, with the exception of current numbers, at the disposal of the librarian. Many graduates will be willing to supply the publications of some society in which their membership is more a matter of general than of personal interest. Neighboring public libraries can be depended on for the loan of less used serials, while consultation at the time of making up the periodical list will often lessen the individual and increase the joint list. As a rule it is a mistake to discontinue a periodical taken for several years, except on account of a marked change in its character or standing. The value of the early volumes becoming more and more historical, this is increased in proportion to the length of time covered.

**Classification of books.**—When the books suited to the purposes of the library have been thus selected by instructors who may be considered experts in their several departments, and by a librarian who has access to the best bibliographic aids and has been trained in their use, there still remains the problem of bringing the books and the students together. This involves at least three things, classification of books by subjects, access to shelves by students, and instruction in bibliography

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<sup>1</sup>Thirteenth report [1890] of Justin Winsor, librarian of Harvard University.

by professors or librarian. All admit that an arrangement of books by subjects is essential to the proper administration of a college library. There is fast coming to be a practical agreement that under ordinary conditions this arrangement can be successfully maintained only by combination with what is known as the "movable location;" i. e., a system of marking which indicates the place of each book by its subject-matter rather than the place assigned it on a certain shelf.

As to the system of classification to be adopted, there is a wide difference of opinion. In our oldest university library, "the idea has been to make such an arrangement as would best accommodate the officers of the university who may have occasion to work at the shelves."<sup>1</sup> In another young and prosperous university this object has been attained by a large number of departmental libraries, built up, it would almost seem, at the expense of the central library, which recently did not noticeably exceed some of them in size and attractiveness. At Cornell University, also, "practical convenience rather than any strictly logical method" has been followed in the classification adopted.<sup>2</sup> At Columbia College the decimal classification was introduced by its author in 1883, and the phenomenally rapid growth of the collection of books there has not as yet led to any essential modification of the system of arrangement.

Not following the example set them by many well-endowed universities, most of the colleges that have been led to reclassify their libraries during the last fifteen years have adopted some one of the fully elaborated and published schemes of classification, too well known to require mention here, and have not attempted to construct a new scheme that should avoid the defects of the former and better answer local requirements. It is in place to mention briefly the advantages of this course. Experience has proved these not perfect, but practicable. College or large reference libraries have used them with satisfaction. They have had the advantage of the best thought and criticism of the library profession of the day, and the changes that the future will make necessary are not likely to be so great as in a scheme devised from the standpoint of a single library and necessarily molded in a great degree by its present condition.

Again, the fact that their various subdivisions are clearly stated in print gives them a definiteness that is of great practical value. The librarian, his assistants, and all interested in the matter can understand from the outset the arrangement that is attempted. Reclassification may go on in different subjects without danger of interference. As a rule a new scheme is put in operation before all the details are decided. The almost inevitable result is that frequent changes are made out of deference to some influential teacher, whose views were not known at

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<sup>1</sup> Second and third reports of Justin Winsor, librarian of Harvard University.

<sup>2</sup> "Classification of Cornell University library," by George William Harris, in *Library Journal*, 16: 138.



the start and may prove exactly opposite to those of his successor. It is agreed, for instance, that a chronologic arrangement of English literature is helpful for purposes of study; but it is not likely that three successive occupants of the chair of English will hold the same opinion as to how far this principle should be followed in arranging the books, or the number of periods to be recognized.

The slighting allusions occasionally made by prominent librarians to these schemes seem often to apply to the notation recommended by their authors, or the minute classification which they will allow, rather than to the arrangement of books they aim to accomplish. The material accessories in the way of indexes, explanatory matter, and printed shelf labels, which are offered in connection with at least one of these systems, are of considerable importance and could not be secured for a new scheme save at a cost almost prohibitive to the ordinary college library.

**Access to shelves.**—A scheme of classification having been carried out and made obvious by shelf labels and placards, access to the shelves becomes necessary, not merely to reap the benefits of the labor thus expended but also to accomplish the aim of the library itself. To have the literature of a subject together where it can be surveyed at a glance is as needful for thorough as for speedy investigation. Every time a student removes from the shelves four or five books on the same topic, glances at their contents and selects the one that in his opinion will best serve his purpose, he not only takes the most important step toward attainment of the desired information, but also employs his faculties in the manner best adapted to strengthen his power of judgment and to quicken his perception of truth. This tasting before one eats can not be done by proxy. The hand of the attendant and the moments of time intervening between the seeker and his shelf full of books is in practice destructive of this use of the library.

A certain familiarity with the titles and appearance of books, only to be gained by repeatedly seeing them on the shelves, is often of value to the college graduate in after life. In some communities he is still supposed to have studied everything. His influence in his specialty is impaired if he shows ignorance of other matters. A mere knowledge of the physical difference between Stalker's *Life of Paul* and Young's *Concordance* may convince all the teachers in the Sunday school that the village physician should be consulted in selecting the village library. Furthermore, the idle curiosity that leads many a student to roam through the alcoves of the college library, generally far the largest collection of books he has ever seen, is frequently the germ of that bookishness characteristic of literary workers. Forbid the gratification of this curiosity and you may stifle a taste that would otherwise bring culture to its possessor.

The difficulties in the way of granting free access to the shelves are so obvious as to be generally overestimated in the case of smaller libraries. In large libraries where these objections seem imperative,



freedom of shelves is granted to advanced students and to those specially recommended by their instructors, while undergraduate needs are met by class room libraries and large reference collections in the main reading room. Often the practice of temporarily reserving books for a particular class, a practice primarily intended to secure equal rights to each member of the class, is carried to such an extent as to bring forth the entire resources of the library on a certain subject, and thus in part to afford the advantages of free access to the shelves.<sup>1</sup>

**Departmental libraries.**—The popularity of the student society libraries which were a marked feature of college life during the first half of this century, was unquestionably due to the prominence they gave to general literature and to the freedom of access to books they granted as compared with the college library. When the literary activity of these societies languished or ceased, it became necessary to protect their libraries, often more used than the college collection, by combining it with the latter. This union has been carried out very generally since the issue of the United States report on libraries in 1876. The change, however, in the methods of college instruction has in the last ten years developed the need and existence of departmental and class room libraries. The wave of combination is fast followed by one of division. "The tendency is to make the university library to an increasing extent a collection of department libraries round a center consisting of those books to the making of which different departments have contributed in common and which they will use in common, and the method of study requires free access to the books in these department libraries."<sup>2</sup> This movement would make even the ordinary college library "a collection of department libraries containing books selected by the professor and instructor in that department rather than one library having a systematic and unifying principle of growth and administration." (W. I. Fletcher, *L. j.* 10: 268.) This necessarily leads to the housing in different laboratories and seminary rooms of a very considerable portion of the books belonging to the institution. The advantages thus gained may be briefly summarized as relief to the main library room, which rarely has the facilities both for a large number of books and a large number of workers, greater freedom with diminished danger from misplacement of books, and assurance of the personal aid and instruction of professors in their use. (Edith E. Clarke, *L. j.* 14: 340; *L. j.* 14: 464; 15: c 143.)

The movement is so general that its dangers, specially in case of unendowed libraries, demand a fuller statement. They appear twofold; on the practical side, the cost and difficulty in successfully maintaining

<sup>1</sup> For access to shelves in college libraries, see *Library Journal*, 2: 55, 69, 70; 10: 221; 13: 35; 17: c70, c86; 18: 113, and fourteenth report [1891] of Justin Winsor.

<sup>2</sup> Edwin H. Woodruff, librarian of Leland Stanford Junior University, in a paper entitled "Some present tendencies in university libraries," read before the International Congress of Librarians at Chicago, July 14, 1893.

separately housed and rapidly growing collections of books, selected by as many different persons; on the theoretic side, the lessening of the importance and influence of the central library as a humanizing factor in college life and as a unifying force in the different fields of intellectual pursuit.<sup>1</sup> In case volunteer assistance equal to that of trained library attendants is forthcoming from the various departments served, the first objection is met in great measure. There still remains the difficulty of securing a symmetrical growth of the different collections without impairing the efficiency of the central library by unduly stinting its purchases. With the increased use of the department libraries it is inevitable that the demand for duplicates will be more and more based on convenience rather than necessity, while the fields of knowledge not at any one period the subject of study will be temporarily neglected, unless the librarian shows unusual foresight and persistence.

While many believe there is no time in college for what is known as a desultory use of books, all agree that it is the time to learn how to read and what to read. (R. R. Bowker, *L. j.* 2: 60.) Now, the central library must possess a preeminence, not alone in size, but in attractiveness, if this object is to be accomplished. The student must find in it not only that scanty "literature of power" which will elude many a departmental division of books, but also a first-class selection from the boundless "literature of knowledge." Otherwise his mind, however sharpened and trained by his special studies, will unconsciously learn to forego the pleasure of investigating the miscellaneous topics that have momentarily aroused its curiosity, since this involves the use, it may be, of a dozen different departmental libraries, all more or less unfamiliar to him. If, as has been recently said, our universities are dominated by the scientific spirit, it is the more needful that the central university library by its inclusiveness, symmetry, and influence should represent the spirit of liberal culture, not as the antagonist, but as the end and aim of specializing study.<sup>2</sup>

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<sup>1</sup> That there is great danger of thus neglecting a central library may appear from the following extract from the sixteenth annual report of the president of Johns Hopkins University. " \* \* \* The sum of \$2,000 given to the university by William A. Slater, esq., of Norwich, Conn., has been expended in the purchase of costly books, not absolutely essential to our daily work, but of great attraction to students. The most of the purchases were in English literature, and among them were the best library editions of Shakespeare, Beaumont, and Fletcher, and other dramatists, Ascham, Milton, Evelyn, Johnson, Dryden, Pope, Scott, Wordsworth, Coleridge, Goldsmith, Lamb, Browning, Tennyson, Lowell, Longfellow, Whittier, and other writers. \* \* \* " The average college, specially if located in a country town, can not afford to wait for a special gift to place on its shelves the best library editions of leading authors in English literature.

<sup>2</sup> There are two ways of combining the obvious advantages of both plans. One, too expensive to be practical unless in very rare cases, is to incur the heavy cost of having both central and department libraries complete by the free buying of duplicates. The other is to make the library the center of the university grounds, and put the cluster of department libraries, with their seminars, in rooms adjoining the



**Instruction in bibliography.**—Since Mr. Emerson made his famous demand on the colleges for a professorship of books and reading, and specially since the publications of the Bureau of Education have shown what has been done in this direction and how it may best be done, few college libraries have failed to make some attempt, either through the librarian or interested members of the faculty, to give instruction in the use of books. These attempts have necessarily been informal and largely spasmodic. Hardly a dozen institutions provide to-day systematic courses of instruction in bibliography.<sup>1</sup> This is due partly to pressure of other work on the librarian, partly to the inability of the college to find or pay a proper salary to a “good encyclopedic adviser in the flesh, ever ready, alluring in manner, and with an enthusiasm for his work.” (Justin Winsor, *L. j.* 3: 120.) All professional librarians, however, fully realize the need both of formal lectures and of that hand to hand, face to face instruction in the library itself, by which methods of investigation are taught, experience gained, and enthusiasm communicated. Quiet but effective work of this character is done in many colleges.<sup>2</sup>

**Subject catalogs.**—As a rule, college librarians feel it incumbent on them to supply a subject as well as an author catalog. So laborious and expensive is this task, when carried out with the elaborateness practiced in larger libraries, that many have envied rather than imitated catalogs such as the College of New Jersey issued in 1884 and the University of California in 1890. Of late a prominent librarian has repeatedly expressed his conviction that this costly key to the resources of a growing library must be given up.<sup>3</sup> The argument against its use in the college or university library is, briefly, this: It is harmful to the ordinary student, who, using it without discrimination, often selects from the numerous titles cited obsolete or misleading books. To the specialist it fails to present the entire resources of the library on any subject, since it does not analyze and include many serial publications. In particular, it fails to mention the existence of important works not in the library. For the former a printed finding list of a picked collec-

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general library and surrounding it as a center. This would enable the students in each seminar room to use the general books and the readers of the general library to reach anything in a department library by merely passing to an adjoining room. This plan requires that the space next the main library shall not be used for administration, museum, general recitation, or any other purposes not requiring immediate contact with the library, since the space on every side will be none too much to provide for seminar rooms and professors' studies in the great field of study of which the library is the laboratory where both professors and students must constantly work.—M. D.

<sup>1</sup> The University of Michigan seems to have been the first in this country to incorporate and maintain in its curriculum a regular course of lectures upon bibliography. This course is fully described by the lecturer, R. C. Davis, in *Library Journal*, 11: 289.

<sup>2</sup> A short course of instruction in Bowdoin College, in which some prominence was given to this feature, is described in *Library Journal*, 17: c87.

<sup>3</sup> W. I. Fletcher in *Library Journal*, 17: c4; and in address on Library catalogs in the twentieth century, at World's Congress of Librarians July 13, 1893.



tion of 5,000 or 10,000 books of recognized merit will be more useful. The latter will find more complete and accurate guidance in printed bibliographies.<sup>1</sup>

The subject catalog, in its development and almost universal use, is peculiarly American, and the views just expressed have yet to win general adoption on this side the Atlantic. (Justin Winsor, *L. j.* 8: 33; 16: 214.) They serve, however, to emphasize the need of careful annotation of the subject catalogs in our college libraries by or under direction of the various professors, and the frequent reference to such separate bibliographies and bibliographic guides as the library has. Many earnest advocates of a subject catalog would doubtless advise a college library mainly composed of recent books to check up an interleaved copy of Sonnenschein's "Best books" with its location marks, rather than attempt to make a subject catalog, whenever the latter course would unquestionably restrict the amount available for future purchases. The extent to which the printed dictionary catalogs of other libraries may be made to serve as a substitute for a subject catalog is seldom fully appreciated in smaller libraries. The recently completed catalog of the Peabody Institute, Baltimore, is well adapted for this use. The task of entering on the margins the location marks of the volumes possessed by a small college library is largely mechanical and can be intrusted to any careful student helper. Entering on the interleaved pages subject references to specially important new books will not unduly burden the librarian himself, specially if he secures the cooperation of interested members of the faculty. Such a subject catalog being mainly in print can be used even more conveniently than a card catalog when the number of those who consult it is limited.

**Library privileges.**—Nearly all college libraries during the last twenty years have extended the privileges granted undergraduates. The spirit that restricted a freshman to one book and a sophomore to two books each half term has practically disappeared. In 1877 it would appear that 1 in 7 of the college libraries were not open daily; the proportion now is only 1 in 40, while over one-half are open upward of thirty hours a week. Then, as a rule, the professors only could make the collection a direct aid in their studies; now, by means of reserved books and long library hours, the privilege is extended to all students. The very few university libraries that do not lend books to undergraduates provide every facility for their consultation in the building.

Many libraries still fail to allow an undergraduate to borrow for a limited time all the books he needs on a definite subject. Why this privilege, granted as a matter of course to teachers, should be refused to learners, is not entirely clear. The usual argument, liability to abuse, may be met by the obvious reply that it is in the power of the administration to prevent such abuse. A charging system that maintains an

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<sup>1</sup> This argument is fully and ably stated by C: H: Bull in *Subject catalogs in college libraries*; in *Library Journal*, 15: 167.

account with both book and borrower, and registers requests for books not found on the shelves, enables the librarian to ascertain just when liberal loans to one individual affect the efficiency of the library for others. (Justin Winsor, *L. j.* 3: 338.) In several libraries any undergraduate is allowed, on written application approved by the librarian, to borrow for a short period a number of specified books on a definite subject in addition to the usual number allowed him. In a small college, or wherever the rules provide for recall of books specially needed, this plan works successfully.

The period of usefulness of each book added to the library is in a certain sense limited. The time necessary for an individual to make the proper use of that book is also limited. Rules about circulation should have regard to these limitations. The rule or practice so often met of allowing professors to keep books without a time limit antagonizes this principle, and almost invariably leads to abuse. (Melvil Dewey, *L. j.* 4: 448.) It has arisen from the fact that certain books are of more use to the professor than to anyone else. These books, however, are so few in number that their withdrawal should be an exception to the rules, rather than that the rules should be framed to cover the exception.

The gradual abandonment of the practice of attaching the librarianship to some college chair has given the undergraduate another privilege, that of having a librarian. With some very marked exceptions, the librarian under the old régime was for the teachers rather than the students. With so much of his thought and energies engrossed with other duties, he was necessarily a custodian rather than a dispenser of books. The opportunity of consulting and enjoying the personal aid and direction of a librarian of mature judgment, wide experience, and full acquaintance with the collection under his charge, is a boon each college should strive to afford its students. The need and the difficulty of securing this in every case are too obvious to require further statement. (T. K. Davis, *L. j.* 10: 100.) Not least among the new privileges afforded college students is that resulting from the growth of the belief that library buildings must be constructed for readers as well as for books. Another article<sup>1</sup> discusses problems of library architecture, and the college librarian should be acquainted with the facilities offered by the new buildings at Cornell University, and at Hartford Theological Seminary, as well as with the plans of the proposed additions to Gore Hall at Harvard. (*L. j.* 14: 121, 264.)

**Devices for popularizing the library.**—Of various devices for popularizing a library several are specially helpful in a college library. One,

<sup>1</sup>Illness of the author caused the omission of this important article. Reference is made to his paper on "Points of agreement in library architecture" (*L. j.* 16: C17-19), and to the two special works on library buildings, which the editor of this volume has now in preparation; one a compact summary of the lessons of experience, the other a full treatment of the subject.—M. D.



first used at Harvard, is thus described: "Slips of paper, headed Notes and queries, followed by a few words of direction, were prepared, and a row of hooks was arranged in a conspicuous place to hold them. A slip having been filled out with a question and hung up, anybody who possesses the information wanted answers the question on the same slip, or refers the inquirer to sources of information."<sup>1</sup> In many libraries a blank book properly labeled and placed in a conspicuous position is found to serve nearly as well, while requiring less space.

A book of complaints may also prove of service. The peculiar ideas of honor prevailing among undergraduates prevent some of them from reporting in person to the librarian annoyances arising from purposely misplaced books, loud talking in study rooms, abstraction of current periodicals, and repeated failure to secure a popular book, though allowing the expression of grievances through this channel.

Even when a library is compelled to buy frugally, it is well to solicit suggestions from all who use it as to books to be bought. This can be done by use of a blank book exposed in a prominent place like the book of complaints. The advantage lies not merely in occasional discovery of a notable deficiency, but in the opportunity to become acquainted with wants and tastes of individuals making requests. Such request often leads to an interview in which the present resources of the library in that direction, its financial restrictions and the comparative merits of the book are so discussed as to excite rather than diminish the general interest of the applicant, even though his request is refused.

The practice of regularly placing on prominent shelves the new books added to the library—new books seem always to find themselves readers—should be supplemented by display from time to time of a selection of the resources of the library on some topic of the day, or on some subject toward which the librarian desires to attract attention. This indirect method of guiding the reading of undergraduates costs little in time and is often as effective as more formal efforts.

**Cooperation.**—Glancing at the condition of the college libraries throughout the entire country, one can hardly fail to be impressed with the restrictions that poverty places on the work many of them might otherwise accomplish. Of 450 institutions of higher learning in the United States only 200 have collections of books large enough to be ranked as college libraries. Of these 200 only a third have professional librarians. Of this third a smaller fraction are well endowed and organized. Till this burden of poverty is lifted it seems evident that the only way for a general increase in efficiency lies in wise cooperation, both with other libraries of their class and with public libraries in their vicinity. The obligation to help, which always comes with the ability, is generally acknowledged by the large and well-endowed university libraries. This assistance, to cite a single instance, can be ren-

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<sup>1</sup> First report [1878] of Justin Winsor, librarian of Harvard University, and Library Journal, 3: 126, 159.



dered without expense in the matter of cataloging. Nowhere is good cataloging more essential than in a college library. Nowhere is there so often a compulsory choice between buying books and properly cataloging them. Yet of the new books obtained by the average library of this class all have just been fully and accurately cataloged by some university library close at hand, if one speaks from the standpoint of the mail service. If several smaller libraries share the expense, printed or typewritten copies of these catalog cards can be secured each month at a fraction of the original cost. For the older books bought and the miscellaneous volumes given them let these same libraries, joining with them small public libraries in the neighborhood, group themselves geographically and engage a professional cataloger, who should pass from one to the other. Thus all accessions could be properly cataloged without undue delay and at far less expense than would be the case otherwise. The librarian, relieved of this time-consuming work, for which, perchance, he has neither aptitude nor training, can devote his energies to duties of his position previously neglected by constraint.

Cooperative cataloging, though so often urged and so obvious a means of diminishing the cost of library administration, is by no means the only channel in which union of effort will bring increased efficiency to smaller college libraries. The practice of lending books from one library to another has not been developed or systematized to the extent it could be, were there a hearty spirit of cooperation. Its importance and usefulness depend, of course, on a certain degree of specialization on the part of neighboring libraries and some consideration and inquiry before buying expensive works. It is a shame that two colleges with modest book funds and only 50 miles apart should each buy a copy of Sargent's *Silva of North America*, and neither be able to supply an inquirer with Scudder's *Butterflies of the Eastern United States*. It may happen that the institutions in one State can make a single set of the *Transactions of the Royal Society of Great Britain* serve them all. This mode of cooperation is specially advantageous in case of the publishing societies. In the department of English, for instance, no small college can afford to buy the issues of the *Philological*, *Early English Text*, *New Shakespeare*, *Spenser*, and *Browning societies*, and yet by agreement with its neighbors it is possible for each professor of English literature to have a complete set of one of them at hand, as well as access to all the others at slight expense.

By specializing on State and local history a group of college libraries may supply themselves with sufficient and suitable material for original work in American history. Let each turn over from its accessions all that belongs to the field assigned another, thus securing special rights as a future borrower. Students from the various towns can be interested in collecting municipal reports and local publications. Others will be willing to undertake the compilation of scrapbooks containing all historical and biographic matter of note that appears in local papers.

Such a course systematically followed for a score of years by a dozen cooperating libraries in any section of the country would give the teachers and the students in the smallest of these colleges better facilities in the manner of completeness of historical matter than is now offered by the largest.

The department of bibliography, in which the university libraries have already done much elaborate work, is also one in which much more can be accomplished by joint action. The need as well as the demand for books like Adams's *Manual of Historical Literature* is ever increasing. Such work must be revised so frequently that it is unlikely to be undertaken and kept up to date from merely commercial considerations. Is it not, however, practicable so to apportion the field that the colleges of the United States may together give their undergraduates and the public simple statements in print of the scope and comparative merits of those books in English that are most used and best adapted for affording information in each of the departments represented in their curricula? Much that has already been done could be used, or by reference made more widely known, and, most important of all, provision could be made for the future revision and issue of these lists. No one library can and no publisher will do this. But all college libraries have daily use for such a series of brief annotated bibliographies and together are able, through the men whose services they can secure, to prepare and to publish them.<sup>1</sup>

**The college library and the public library.**—If the proprietary library is the parent of the free public library, college and school libraries may justly claim rank as paternal and maternal grandparents.<sup>2</sup> Though, as often happens on this side the Atlantic, the child has outstripped its ancestors in size and importance, and has occasionally forced them to follow rather than lead in new and improved methods, still friendly, if not filial, relations must be maintained. When they exist side by side in the same town one can easily supplement the work of the other. Few would claim that the college student should be denied access to the popular literature of the day; all agree that it must not be too accessible. The college library can, therefore, leave this field

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<sup>1</sup>At the Chicago meeting, where this paper was read, the A. L. A. publishing section was reorganized and is actively engaged in several enterprises such as is here suggested, and proposes to organize others as fast as the demand and support of librarians justify. Full information of the work of the section and of the different publications in preparation can be had from the president, Melvil Dewey, State library, Albany, N. Y.—M. D.

To those who have read Otis H. Robinson's report on cooperative college cataloging, in *Library Journal*, 1: 434—to cite but one out of many references that might be made—it is obvious that these suggestions are by no means novel. College librarians as individuals, however, have had so prominent a part in the cooperative work accomplished since 1880 that it seems proper to urge on college librarians as a class the need of organized effort in the same direction.

<sup>2</sup>M. C. Tyler on the Historical evolution of the free public library, in *Library Journal*, 9:41.

to be entirely supplied by its neighbor. On the other hand, the public library should be encouraged by the college library to refer to it school teachers and all persons of studious tastes who find its collection too limited for their needs. The college, through the librarian and professors, can increase its efficiency as an educational factor by lectures or informal talks, setting forth its resources in the departments they represent (*L. j.* 12: 253; 16: 214). The use of a university library as a semipublic reference library is in strict accord with the general purpose for which the institution was founded (Otis H. Robinson, *L. j.* 2: 57). It is surely to their credit that a recent traveler has written that in America the college libraries offer the best facilities for literary work on the premises. In large cities it sometimes happens that the relative position of the college and the public library is reversed. The latter from its age and large income can supply all that the collegian requires, save a carefully selected collection of reference books in connection with his recitation rooms.

If the process of sifting or weeding out public libraries, discussed in another chapter,<sup>1</sup> is generally adopted, it becomes specially desirable that each university library should have the privilege of selecting certain classes of books; for instance, text-books used in the past in the institution, writings of its alumni, reports of charitable bodies useful in sociologic study, before these are consigned to the auction room. In return for such gifts, temporary loans may be made during the continuance of university extension lectures of scientific and expensive books which would not otherwise be obtainable. In a word, the spirit of mutual helpfulness is alike necessary and profitable if the two classes of libraries are to attain to their ideal.

### FICTION.

By ELLEN M. COE, librarian New York free circulating library.

The importance of the careful consideration of fiction, especially in free public libraries, is never questioned. It was discussed at length at the first meeting of the A. L. A. in Philadelphia in 1876 (*L. j.* 1: 96, 98); also at the first meeting of the L. A. U. K., London, 1877 (*L. j.* 2: 255); and again at the Boston conference of the A. L. A. in 1879, when a number of valuable papers were contributed (*L. j.* 4: 319). It is the subject of a report of the cooperation committee (*L. j.* 7: 28), and of a symposium (*L. j.* 15: 261-64; 16: 8-10). Magazines and periodicals are constantly publishing articles on the various relations of libraries and librarians to the reading and supply of fiction; the *Library journal* alone in its 16 volumes indexes over 120 articles and paragraphs. Criticisms by men of letters and by educators which are everywhere met in print are not to be ignored by the library profession; no president's address at any meeting of library association or club fails to touch feelingly this important subject; and speakers at the opening of libraries always point the moral and utter the note of warning. Books

<sup>1</sup> See discussion by S: S. Green, p. 698; also p. 918 of this paper.



and pamphlets in great number and of no little value have been published, and, indeed, it would at first seem impossible to gain from this mass of material the fair judgment of the majority. After carefully reading some hundreds of books, pamphlets, articles, and letters on the subject, and considering the opinions brought out in the discussion of this and kindred topics at the A. L. A. Chicago meeting, I present the following as a fair deduction, not affected by my own feelings or opinions.

**Value of fiction.**—The utterance is almost as one voice that fiction is of the greatest value in developing a taste for reading, but is most certainly injurious unless of good quality, or if the reading of that class of literature is indulged in exclusively. It is agreed that false literary taste in the young may by judicious direction be corrected, but that in adults the effect of bad reading is almost ineradicable. It is urged that everyone should be familiar with the great works of imagination, and the fact is pointed out that nearly all the greatest—the immortal—literature of the world is fiction.

The educational value of the novel is maintained. It is claimed that the imagination is the first faculty that should be developed in childhood, but it is believed, however, that the reading of stories by children should be largely in connection with their studies and under their teachers' direction. In particular the educational value of the historical novel and the travel story is emphasized as helping to fix in the reader's mind the facts of history, and as giving vivid and enduring pictures of remote times and places. Such books are admitted to libraries from which romantic fiction is excluded.

It is, however, chiefly as "pastime reading" that fiction is demanded, and the argument for its supply by the public library runs mainly as follows: The majority of people are busy so many hours of the day that when they have time to read they have little strength for such reading as may task the brain. Reading is at once the most elevating and refining of all pastime, and people have the same right to it that they have to recreation in the public parks. While a librarian should try to guide his readers judiciously from lighter fiction to that of the best class, and also to works of more serious character, it is deemed distinctly his duty to furnish entertaining reading matter to his public.

The function of the public library becomes more and more educational, and it is interesting to note an advance toward the radical wing of the division. Many librarians in their published writings, as well as in their recent letters to me on this subject, acknowledge that their theories and practices are becoming more strict since they do not find the necessity laid on them to provide a great deal of light entertainment for their public.

At the same time the value of the novel as a proper means of rest and relaxation after severe mental or physical toil is constantly urged. It is contended, however, that this may be provided in ample quantity without the admission of novels questionable from the strict literary or

moral standpoint. Many writers on this subject deprecate the excessive reading of even the best novels, believing that in most cases it is only an excuse for mental laziness, and that it weakens the power of serious study and application, and unfits for the higher duties of life. Schopenhauer remarks that "feeble writing unfits us for stronger food." From this point the argument leads naturally to the extreme view that public libraries should draw the line absolutely at what is believed to be of educational value.

**Quality of fiction supplied.**—Regarding the literary quality of the fiction which a public library should supply opinions vary from "admit whatever is called for" to "exclude the works of all living novelists while admitting very few by the dead ones," but the great and reasonable majority reaffirms the theory that "it is best to avoid the lowest classes of books and to keep up a high standard." A large provision of trashy fiction is not necessary to draw the public to the library; indeed only a very small minority expresses itself in favor of this practice, which would find its only excuse in proving that this kind of literature is the most entertaining. The point is made that much fiction which is light and entertaining is, at the same time, of excellent literary quality. The pertinent question is asked, "Why should a different literary standard be applied to fiction than to other classes of books in the selection of which the greatest care is taken, and the opinions and criticism of experts sought in order that the best books may be chosen for library lists?" Also, "Since even the largest libraries must select, as they can not buy all the novels published, why not select the best?"

There is much testimony to show that the public likes the best books, and will read them when provided. One writer says, "Supply fiction liberally, but at the start furnish only the higher grades, adding sensational books sparingly to catch certain classes of readers when it is found impossible to attract them otherwise." That libraries should be obliged to furnish books which they would, for sound reasons, otherwise reject "in order to gain the public support that comes from an extended use of the library" would seem unfortunate, and a distinct degradation of the purpose of the library, that of public benefactor. The moral aspect of the question provokes little discussion, and that mainly in treating of translations. Feeling unquestionably favors admitting in the original much which would be excluded in translation, always on the ground that this is necessary to the study of foreign literature, and that the books will be mainly used for such study. The universal opinion is that as far as possible all evil should be kept from the young.

**Quantity of fiction supplied.**—This varies, according to answers to my circular letter, from 10 to 45 per cent of the whole number of volumes in the library. The average is 24, which is somewhat larger than the 20 per cent advised in starting new libraries. The percentage allowed by the committee for the A. L. A. library was only 16.



The library making the largest provision for fiction reports the largest yearly issue of fiction. Exactly the same fact was observed by Mr. T. Mason in determining the average per cent circulation of fiction in 25 libraries of Great Britain, and is noted in his report (*L. j.* 15: 265-66). Fifteen per cent of the money allowed for buying books is believed to be ample for fiction, these publications being usually of low prices and large discounts.

**Selection.**—This is not usually, and probably should never be, left wholly to the librarian, as this involves undue responsibility. In most cases purchase lists are made up by the librarian from reviews, aided by requests and suggestions from readers. "Books called for" are noted in a blank-book or on slips giving publisher, price, and, whenever possible, reliable criticism, and are usually signed by the person making the request; duplicates wanted are indicated in the same way. These lists are approved and should always be signed by a trustee, and preserved, in order that the librarian may be protected from adverse criticism.

**Direction of fiction reading.**—This is not often attempted except through the annotated catalogs and lists, and by preparing lists and bulletins of "Best novels," "Historical novels," etc. Bulletins of carefully selected and annotated books suitable to various school grades are constantly appearing. Personal effort by librarians is usually judiciously limited to such as is requested by readers or by parents and guardians. In small towns or communities the librarian becomes the acquaintance and friend to whom the reader naturally turns for advice, when the conditions become quite different from those existing in the general public library, where the keeper and distributor of books can not be held responsible for the moral and intellectual well-being of the community. Common-sense and tact must direct in this as in all departments of library work.

**Classification.**—Fiction is almost always alphabeted under authors' names, and Cutter book numbers are generally used. Fiction suited to the young is sometimes separated from other for convenience in delivering books, and should always be indicated by some sign on the outside of the book which will serve as instruction to attendants in selecting suitable books for young readers.

**Fiction catalogs.**—These are usually both author and title lists; if only one can be provided, the title list is preferred. Whenever possible, lists should be annotated. Very brief notes indicate place and period treated in historical novels, or subject and scope of the "Tendenz-Roman," and these add greatly to the value of the catalog, whether printed or on cards. The little time and labor required to prepare these notes will be repaid many-fold. Happily much good work of this kind is already at the service of the librarian or cataloger, and much more is promised in the near future. Fiction lists which are not annotated should be accompanied by a comprehensive list of "best novels" as a guide to those wishing to read the best, together with references



to Boston, Philadelphia, and other "Historical fiction" lists, Griswold's "Descriptive lists," etc.

It would not be just to omit from this consensus of opinion the report of William Kite, librarian of Friend's free library, of Germantown, Pa., the only public library reporting to me which admits no novels. This report gives assurance that, after persevering for twenty years in its extreme radical course, the library stands in its community as the exponent of the highest benevolent and educational ideas, and the management sees no reason to change its attitude on the fiction question.

## AIDS TO READING AND THE SELECTION OF BOOKS FOR LIBRARIES.

- ABBOTT, LYMAN, *ed.* Hints for home reading. N. Y. 1880.  
 BALDWIN, J: The book lover; a guide to the best reading. N. Y. 1888.  
 Boston Pub. Lib. List of books on books and reading. Bulletin No. 9.  
 BURT, M. E. Literary landmarks; a guide to good reading for young people, and teacher's assistant. N. Y. 1889.  
 CALLER, M. A. Literary guide for home and school. N. Y.  
 HARRISON, F: Choice of books. N. Y.  
 PARSONS, F., *and others.* World's best books. Bost. 1889.  
 PERKINS, F. B. The best reading. (With supplements) by L. E. Jones. N. Y. 1879-91.  
 PORTER, NOAH. Books and reading. With an app. containing a select catalogue of books. N. Y. 1881.  
 PRYDE, D. Highways of literature, p. 26. N. Y. (1883.)  
 PYCROFT, J. Course of English reading, p. 65. N. Y. 1845.  
 RICHARDSON, C. F. The choice of books. N. Y. 1882.  
 SARGANT, E. B., *and* WHISHAW, B. Guide-book to books. Lond. 1891.  
 SONNENSCHN, W: S. The best books. A reader's guide. Lond. 1891.  
 VAN RHYN, G. A. F. What and how to read. N. Y. 1876.  
 Consult also the A. L. A. catalog, fiction list.

## ANNOTATED AND SELECTED LISTS OF NOVELS.

- Boston Pub. Lib. Chronological index to historical fiction.  
 ——— Class list of English prose fiction, including translations and juvenile books, with notes for readers, intended to point out for parallel reading the historical sources of works of fiction. 1877.  
 ——— Catalogue of English prose fiction and books for the young. 1885.  
 BOWEN, C. Descriptive catalogue of historical novels and tales. Lond. 1882.  
 BRETT, W: H. Best ten novels for the minister. Advance, Nov. 28, 1891.  
 GRISWOLD, W: M. Descriptive lists of novels and tales dealing with life in France, Germany, etc.  
 GUY, W: E. Pastime reading; a partial list of novels that would probably be called standard by the majority of readers, prepared for the convenience of those who are at a loss for some light but good reading. St. Louis. 1891. 248 titles.  
 HARDY, G: E., *ed.* Five hundred books for the young. N. Y. 1892.  
 Hartford, Conn., Library Association. Author list of novels. 1893. (Annotated.)  
 ——— Boys' and girls' books. 1892. (Historical and critical notes.) *See also* Hewins, C. M.  
 HEWINS, C. M. Grown up fairy tales. Travelers record, v. 26, No. 6.  
 ——— Notes on novels. Bulletin of the Hartford Library Ass'n. v. 12.  
 ——— Our grandmothers' novels. Travelers record, v. 26, Nos. 1, 2.  
 ——— Some historical novels. Travelers record, v. 25, Nos. 2, 3.

- HEWINS, C. M. Some novels to read. Travelers record.  
 ——— 'Ten years' novels. Travelers record, v. 27, No. 7.  
 Hundred greatest novels. *L. j.* 17: 55.  
 LINDERFELT, K. A. Historical novels of Alex. Dumas. Arranged chronologically according to the date when each one begins (etc.). *L. j.* 15: 270.  
 ——— One hundred of the best English novels.  
 ——— Fifty of the best foreign novels in English dress. *L. j.* 15: 67.  
 Pall Mall Gazette. Best hundred books. 1887.  
 Philadelphia, Mercantile Lib. Historical fiction. Bulletins, Oct. 1886-90. 17 nos.  
 St. Louis Pub. Lib. Best books for the young. A selected and graded list. 1884.  
 ——— "Best ten," "Next best ten," "Best hundred," etc. A consensus of opinion. Bulletin No. 28, also in pamphlet.  
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 Worcester, Mass. Free Pub. Lib. Bulletins (Annotated).  
 World almanac. List of ten best novels.  
 ——— List of one hundred best novels. *L. j.* 17: 55.

#### BOOKS, ARTICLES, PAPERS, ETC., RELATING TO FICTION.

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 ATKINSON, W. P. On the right use of books; a lecture. Bost. 1880.  
 BATES, ARLO. Realism and the art of fiction. *Scrib.* 2: 241.  
 Battle of the novels. From the Saturday review. *L. j.* 15: 310-11.  
 Books which have influenced me. N. Y. n. d.  
 CALVERT, G: H. Books for boys. In Brief essays.  
 CARLYLE, T: On the choice of books. Lond. 1871.  
 Chambers Cyclopædia, new ed. Article: Novels.  
 Church quarterly. Theology and morality in fiction. April 1892.  
 COWELL, P. On the admission of Fiction in free libraries. Paper read at the conference of librarians held in London, Oct. 1877. *L. j.* 2: 152-59.  
 CRAIK, D. M. M. On novels and novel-makers. In Plain speaking. N. Y. 1882.  
 CRUNDEN, F: L. Literature in education. Address before the Unitarian club of St. Louis.  
 CUTTER, C: A. Common sense in libraries. President's address. *L. j.* 14: 150-51.  
 CUTTING, M. D. Two forces in fiction. *Forum* 10: 216.  
 DOLMAN, F. The social reformer in fiction. Westminster review. May 1892.  
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 ELIOT, GEORGE. Silly novels by lady novelists. Essays, p. 157. N. Y. 1883.  
 FOSTER, J: Morality of works of fiction. Critical essays, 1: 417. (Bohn ed.)  
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 GREEN, S: S. Remarks at conference of librarians, Phila. 1876. *L. j.* 1: 99-100.  
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 ——— Paper read at conference of librarians, Bost. 1879. *L. j.* 4: 345-355, also in pamphlet.  
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 GREG, W. R. False morality of lady novelists. Literary and social judgment, p. 85.  
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- HODGSON, W. E. A prig in the Elysian fields. National review. April 1892.
- HUBBARD, J. A. The public library and the school children. An appeal to the parents, clergymen, and teachers of Boston. Bost. 1881.
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- MARTIN, Sir THEODORE. Novel-reading. Address in aid of funds, Llangollen, Wales, Pub. Lib. *L. j.* 17: 241-42.
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- MATTHEWS, BRANDER. Home library by Arthur Penn. (*pseud.*). N. Y. 1883.
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- MILLER, HUGH. Our moral literature. In Essays. Bost. 1865.
- Novel-reading: pro and con. In Girls and their ways. A book for and about girls. By one who knows them. Lond. 1881.
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- STEVENSON, R. L. Some gentlemen in fiction. Scrib. 3: 764.
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- THWING, C. F. The reading of books; its pleasures, profits, and perils. Bost. 1883.
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## REGULATIONS FOR READERS.

By W. H. BRETT, Cleveland (Ohio) Public Library.

The following paper is based upon replies to a series of questions upon the subject, received from 110 free public libraries, 22 public libraries for the use of which a fee or subscription is required, 34 libraries of colleges and other institutions of learning, 12 libraries of societies of various sorts, and 13 State libraries; 191 in all.

The assignment of papers for this meeting contemplated a historic review of each topic for the past seventeen years, but the subjects in regard to which rules are framed are so various that the most which



can be attempted is a brief survey of library practice. I think I may fairly say, however, from such information as I can gather, that while the changes that have occurred in that time have been few, so far as they have been made they have been in the direction of greater liberality.

A general free public library in a large city, comprising both a reference and a circulating department, comprehends within the scope of its work every phase of library activity. It includes upon its shelves, more or less fully, the whole range of human knowledge, and it meets so far as possible the wants of all classes of people. In framing its rules it is necessary to consider almost every possible problem in library economy.

The discussion of a comprehensive code of rules for a public library would include, therefore, every condition likely to confront the librarian of any library. I can at this time only attempt to present to you a résumé of the rules now governing many of the public libraries of this country, some brief notice of the variations therefrom in other classes of libraries, and the suggestion of a few questions which may be fairly regarded as open for discussion.

Library rules naturally fall under two heads: First, the qualifications of the reader; second, methods in the library; or, in other words, they answer the questions: Who shall use the library? How shall he use it?

#### QUALIFICATIONS.

The qualifications usually regarded are as follows:

**Residence.**—Most libraries issue books for home use to the residents of the town or city only. In a few cases it is extended to the county, and in one instance, a radius of 10 miles is mentioned as the limit. The use of many free endowed libraries is limited to the community which is the recipient of the beneficence, and the prevailing practice among those supported by public funds is to limit the use to the territory taxed for its support. A small number of libraries, among them some supported by taxation, extend all their privileges to all within their reach.

**Age.**—Most libraries fix an age before which a child may not draw books. In 31 libraries from which I have heard, the limit is 12 years, in 24 it is 14 years, in 12 10 years, in a few others ages varying from 6 to 16. In 22 no age was fixed, but the qualification was variously stated as "ability to read," "to use a book properly," or "to write one's name."

**Responsibility.**—This is usually stated about as follows: "Persons known to the librarian, or satisfactorily vouched for in writing." This rule is almost universal, as is also that of accepting a deposit of money varying from \$2 to \$5, and in a few cases even more, in lieu of a guarantee.

The foregoing applies only to those who wish to draw books for home use. In a few libraries similar restrictions apply to the use of reference

departments and reading rooms. In most libraries, however, these are practically open to all, the only qualification being proper behavior.

#### RULES FOR LIBRARY MANAGEMENT.

These relate to the hours of opening, facilities for the selection and use of books in the library, and for their issue. This subject can not be treated fully without trenching on other fields, but this will be done only so far as necessary.

**Library hours.**—Usage varies greatly. Libraries of the larger cities are usually open twelve hours each week-day, the time of opening varying from 8 to 10 o'clock a. m., and of closing from 9 to 10 p. m. In some libraries the reference department is open longer than the circulating department.

**Sunday and holiday opening.**—In most of the larger and some of the smaller libraries, the reference and reading rooms are open on Sunday afternoon and evening, in a few instances for the afternoon only, and in three libraries of which I am informed these departments are open in the forenoon also. A few libraries keep the circulating department open on Sunday. The smaller libraries throughout the country, specially in New England, generally close. The reply to the question in regard to this was usually accompanied by the remark that it was not desired nor needed, and occasionally by an adverse opinion as to its propriety. The experience of many libraries covers a period of from ten to twenty years or more, so that it can not be regarded as an experiment. Those librarians who have had experience almost unanimously favor opening reading and reference rooms on Sunday afternoons and evenings, and with equal unanimity regard it as unnecessary to open the circulating department.

In some of the larger and a few smaller libraries the reference and reading rooms, and in two or three instances the circulating department also, are opened on holidays. Two or three libraries report it as their practice to close on Christmas, the universal holiday, and Fourth of July, the national one, and to open on all others.

The whole question of library hours during the week, and of Sunday and holiday opening, is purely a local one, in which uniformity is neither possible nor desirable. Each library must conform to the needs of its own locality.

**Selection of books.**—Most public libraries have printed or card catalogs, or both, to assist readers in selecting books. Besides this a small number permit general access to the shelves in the circulating department, for the examination and selection of books. In about 55 per cent such access is entirely prohibited, and in the remainder, or about 45 per cent, although prohibited generally, exceptions are made. These exceptions are variously stated as being in favor of "professional men," "ministers," "teachers," "students," or as being "occasional" or "for sufficient reason." Views as to its desirability differ widely.

The opinion of those librarians where access is permitted are with a single exception favorable, some enthusiastically so. It is curious to note that to a large extent the favorable opinion seems to be based on experience, and the unfavorable on a lack of it.

In the reference department the reverse of this condition prevails. In not less than 75 per cent of the public libraries from which I have information, free access is permitted to most books in the reference department, the exceptions noted being that special care is taken of fine illustrated books and of medical works. In a number of other libraries, the most common books of reference—as dictionaries, gazetteers, cyclopedias—are placed where they can be freely used, and all others are given out on application.

**Reading rooms.**—In a majority of libraries magazines and papers are placed where readers can select for themselves. In some libraries papers are left on files, but magazines are given out from the desk and a receipt taken. In a very few libraries only are both papers and magazines given out in this way.

**Issue of books, borrowers' cards.**—More than 90 per cent of those public libraries furnishing information require a card of membership to be presented each time a book is drawn or returned. On most of these an entry is made, usually the date of issue and return, and in a few cases the book number also. In a few cases only no entry is made. About one-fourth of those libraries adopting this plan make exceptions and permit books to be issued occasionally on a temporary slip or memorandum. In the others the rule is, presumably, rigidly enforced. About 10 per cent do not require membership cards.

**Number of books.**—The general practice is to issue one volume at a time on a card, except that two or more volumes of the same set are issued as one book. In a few libraries two, and in one case three, books are regularly issued at one time on one card. Frequent exceptions, however, are noted to this rule, in which additional volumes are issued to students. The rules very generally allow additional volumes to teachers.

**Time of issue.**—The time for which books are issued is generally fourteen days, with the privilege of one renewal for the same period. In some cases the renewal is for one-half the original period, and very rarely no renewal is permitted. In a few cases books are issued directly for three or four weeks and no renewal permitted. One very common exception to the fourteen-day rule is the issue of new books for seven days only and of magazines for seven days or less, both without privilege of renewal. In some libraries it is necessary to bring the books in for renewal; in others a personal request or one by mail will be attended to.

In some libraries the rule requires that all books be returned on or before a certain time, for an annual examination, during which the library is closed.



**Fines.**—The current rate of fine for overdetection is 2 cents for each day. In a few cases this is 1 cent or 3, and in one instance only, 5. Rarely the fine is assessed by the week, at 10 or 25 cents.

#### MISCELLANEOUS RULES.

Rules requiring proper behavior and forbidding the use of tobacco are almost universal, as are those which forbid copying or tracing of illustrations without permission, or the use of ink at the tables. Canvassing or the display of advertisements is also forbidden.

A rule which occurs in some codes requires the borrower to notify the librarian promptly if a case of contagious disease occurs in the household of which he is a member, and to retain the book until a proper disposition can be made of it.

Some of the larger libraries have formulated codes of rules for the library assistants. The only ones which have come under my notice which affect the users of the library, even indirectly, is one which forbids conversation of a personal nature, and another which restricts the privileges of the assistant as a borrower of new books.

**Subscription libraries.**—The practice in public libraries requiring the payment of a fee varies little from that of other public libraries, except in that particular. There is apparently somewhat greater freedom permitted in the library, as about one-half of the libraries from which I have information permit unrestrained access to the shelves.

The libraries of secret and other societies are practically subscription libraries. Among the Y. M. C. A. libraries of which I am informed, one is a free circulating and reference library, another is a free library, for reference only, and a third charges a small fee in its circulating department, but makes its reference department practically free.

**College libraries.**—The practice in college libraries varies greatly. A majority are for the use of those connected with the institutions only. In others the privileges are extended to graduates and to professional men or special students, and a few are free to all who wish to use them. Some libraries issue books for home use to members of the faculty only, limiting their use by students to the library rooms, but generally they are issued to both students and professors. The hours of opening are generally less than those of public libraries, only about one-third being open evenings. More than one-half the libraries from which I have information permit general access to the shelves, and in most in which the practice does not prevail members of the faculty invariably have the freedom of the shelves, and permission is granted to the students for any sufficient reason. Most college libraries which issue books fix a definite period for which they may be kept, and assess a fine for their overdetection, as in public libraries.

**State libraries.**—These vary so widely in their scope and methods that no general statement of these rules can be attempted from the data at hand.

## READING OF THE YOUNG.

CAROLINE M. HEWINS, Hartford Public Librarian.

In the Government report on libraries, 1876, the relation of public libraries and the young was treated by Mr. W. I. Fletcher, who discussed age-restrictions, direction of reading, choice of books, and incidentally the relation of libraries to schools, referring to librarians and trustees as "the trainers of gymnasts who seek to provide that which will be of greatest service to their men." The report was suggestive, and called for several radical changes in the usual management of libraries. No statistics were given, for none had been called for, and the number of libraries which were working in the modern spirit was not large. Mr. Green, in his paper at the Philadelphia conference of 1876 (*L. j.* 1: 74), gave some suggestions as to how to teach school boys and girls the use of books, and in one or two of the discussions the influence of a librarian on young readers was noticed, but the American Library Association did not give much time to the subject till the Boston conference of 1879, when a whole session was devoted to schools, libraries, and fiction (*L. j.* 4: 319), the general expression of opinion being similar to the formula expressed in the paper by Miss Mary A. Bean, "Lessen the quantity and improve the quality." In 1881, Mr. J. N. Larned, of the Buffalo Young Men's Library, issued his pamphlet, "Books for young readers." The report on "Boys' and girls' reading" which I had the honor of making at the Cincinnati conference of 1882 has answers from some 25 librarians to the question "What are you doing to encourage a love of good reading in boys and girls?" (*L. j.* 7: 182.) Several speak of special catalogs or bulletins, most of personal interest in and friendship with young readers. One writes, "Give a popular boy a good book, and there is not much rest for that book. Librarians should like children." It was in 1883 that, by the suggestion and advice of our lamented friend, Frederick Lypoldt, I published a little classified pamphlet, "Books for the young." In January of the same year the Library Journal began a department of "Literature for the young," which was transferred at the end of the year to the Publishers' Weekly, where it still remains. The report on the subject, made for the Buffalo conference by Miss Bean, is on the same lines as the former one, with the addition of the experience of some smaller libraries. She says, "I believe the Lynn library has hit a fundamental truth, and applied the sovereign remedy, so far as the question concerns public libraries, in its 'one-book-a-week' rule for pupils of the schools."

Miss Hannah P. James's report at the Lake George conference in 1885 (*L. j.* 10: 278) sums up the information received from 75 sources in some suggestions for work in connection with school and home, suggesting the publication of book lists in local papers, supervision of children's reading if authority is given by parents, and the limitation of school

children's book to one or two a week. At the St. Louis conference of 1889 Miss Mary Sargent reported on "Reading for the young" (*L. j.* 14: 226). One librarian fears that lists of books prepared for boys and girls will soon become lists to be avoided by them, on account of young people's jealous suspicion of undue influence. Sargent's "Reading for the young" was published just after the White Mountain conference of 1890, and the subject was not discussed in San Francisco in 1891 or at Lakewood in 1892 except in relation to schools.

The Ladies' Commission on Sunday school books is at least five years older than the American Library Association. It has done good service in printing lists of books specially adapted to Unitarian Sunday schools, others unfitted for them only by a few doctrinal pages or sentences, and a third class recommended as household friends on account of their interests, literary value, and good tone. The Church Library Association stands in the same relation to Episcopal Sunday schools, recommending in yearly pamphlets:

- 1 Books bearing directly on church life, history, and doctrine.
- 2 Books recommended, but not distinctly church books.

The Connecticut Ladies' Commission has, at the request of the Connecticut Congregational Club, published since 1881 several carefully chosen and annotated lists.

The National Young Folks' Reading Circle, the Chautauqua Young Folks' Reading Union, and the Columbian Reading Union, the latter a Catholic society, the others undenominational, have published good lists for young readers. The Catholic Church also recommends many recent stories for children which have no reference to doctrines or differences in belief.

One hundred and fifty-two out of 160 libraries have answered the following questions:

- 1 Are your children's books kept by themselves?
- 2 Are they classified, and how?
- 3 Have they a separate card catalog or printed finding list?
- 4 Are they covered?
- 5 Do you enforce rules with regard to clean hands?
- 6 Have you an age limit, and if so, what is it?
- 7 Do you allow more than one book a week on a child's card?
- 8 Are children's cards different in color from others?
- 9 What authors are most read by children who take books from your library?
- 10 What methods have you of directing their reading? Have you a special assistant for them, or are they encouraged to consult the librarian and all the assistants?
- 11 Have you a children's reading room?

Seventy-seven reply to the first question that their children's books are kept by themselves, 22 that stories or other books are separate from the rest of the library, and 53 that there is no juvenile division.

Three answer simply "Yes" to the second question, 24 have adopted the Dewey system, in two or three cases with the Cutter author marks, 4 the Cutter, and 1 the Linderfelt system; 10 arrange by authors, 18 by



subjects, 4 by authors and subjects, 42 report methods of their own or classification like the rest of the library, and 46 do not classify children's books at all.

In answer to the third question, 6 libraries report both a separate card catalog and finding list, 43 a finding list for sale or distribution, 15 a card catalog for children, and 88 no separate list. Of the printed finding lists 4 are Sargent's, 1 Larned's, 2 Hardy's, and 2 Miss James's.

The fourth question relates to covering books for children. Eighty-five libraries do not cover them, 30 cover some, either those with light bindings or others that have become soiled and worn, 35 cover all, and 2 do not report.

In reply to the fifth question, 45 libraries require that children's hands shall be clean before they can take books from the library, or at least when they use books or periodicals in the building, and 50 have no such rules. Others try various methods of moral suasion, including in one instance a janitor who directs the unwashed to a lavatory, and in another a fine of a few cents for a second offense.

The sixth question, whether there is an age limit or not, brings various replies. Thirty-six libraries have none, five base it on ability to read or write, one fixes it at 6, one at 7, and one at 8. Ten libraries allow a child a card in his own name at 10, two at 11, forty-seven at 12, six at 13, thirty-three at 14, four at 15, and six at 16. They qualify their statements in many cases by adding that children may use the cards of older persons, or may have them if they bring a written guarantee from their parents or are in certain classes in the public schools.

Question 7 deals with the number of books a week allowed to children. Ninety-five libraries allow them to change a book every day; one (subscription) gives them a dozen a day if they wish. Fifteen limit them to two, and 3 to three a week, and 16 to only one. Several librarians in libraries where children are allowed a book a day express their disapproval of the custom, and one has entered into an engagement with her young readers to take 1 book in every 4 from some other class than fiction. Others do not answer definitely. A few libraries issuing two cards, or two-book cards, allow children the use of two books a week, if one is not a novel or story.

Question 8 is a less important one, whether children's cards are of a different color from others. There is no difference between the cards of adults and children in 124 libraries, except in case of school cards in 2. In 4 the color of cards for home use varies, and 4 report other distinctions, like punches or different charging slips. Eight do not charge on cards and 12 do not answer.

With regard to question 9, "What authors are most read by children who take books from your library?" the lists vary so much in length that it is impossible to give a fair idea of them in a few sentences. Some libraries mention only two or three authors, others ten times as many. Miss Alcott's name is in more lists than any other. Where

only two or three authors are given, they are usually of the Alger, Castleman, Finley, Optic grade. These four do not appear in the reports from 35 libraries, where Alden, Ballantyne, Mrs. Burnett, Susan Coolidge, Ellis, Henty, Kellogg, Lucy Lillie, Munroe, Otis, Stoddard, and various fairy tales fill their places. Seven are allowing Alger, Castlemon, Finley, and Optic to wear out without being replaced, and soon find that books of a higher type are just as interesting to young readers.

Question 10 asks what methods are used in directing children's reading, and if a special assistant is at their service, or if they are encouraged to consult the librarian and all the assistants. Many librarians overconscientiously say, "No methods," but at the same time acknowledge the personal supervision and friendly interest that were meant in the query. Only nine do not report something of this kind. Six have, or are about to have, a special assistant, or have already opened a bureau of information. Five say that they pay special attention to selecting the best books, 4 of the larger libraries have open shelves, and 2 are careful in the choice and supervision of assistants.

In answer to question 11, 5 report special reading rooms, present or prospective, for children; 3 more wish that they had them, while others believe that the use of a room in common with older readers teaches them to be courteous and considerate to others. Most reading rooms are open to children, who sometimes have a table of their own, but in a few cases those under 14 are excluded.

My own opinion on the subjects treated in the questions are:

1 It is easier for a librarian or assistant to find a book for a child if whatever is adapted to his intelligence on a certain subject is kept by itself, and not with other books which may be dry, out of date, or written for a trained student of mature mind.

2 It is easier to help a child work up a subject if the books which he can use are divided into classes, not all alphabeted under authors.

3 A separate card catalog for children often relieves a crowd at the other cases. A printed dictionary catalog without notes does not help a child.

A public library can make no better investment than in printing a classified list for children, with short notes on stories illustrating history or life in different countries, and references to interesting books written for older readers. Such a list should be sold for 5 cents, much less than cost.

4 The money spent in paying for the paper and time used in covering books is just as well employed in binding, and the attractive covers are pleasant to look at.

5 The books can be kept reasonably clean if children are made to understand that they must not be taken away, returned, or if possible, read with unwashed hands. City children soon begin to understand this if they are spoken to pleasantly and sent away without a book till they come back in a fit state to handle it.



6 As soon as a child can read and write he should be allowed to use books. A proper guarantee from parent or teacher should, of course, be required.

7 A child in school can not read more than one story book a week without neglecting his work. If he needs another book in connection with his studies he should take it on a school teacher's, or nonfiction card.

8 It is best, if a child has only one book a week, for his card to be of a different color from others, that it may be more easily distinguished at the charging desk.

9 It has been proved by actual experiment that children will read books which are good in a literary sense if they are interesting. New libraries have the advantage over old ones, that they are not obliged to struggle against a demand for the boys' series that were supplied in large quantities fifteen or twenty years ago.

10 As soon as children learn that in a library there are books and people to help them on any subject, from the care of a sick rabbit to a costume for the Landing of the Pilgrims, they begin to ask advice about their reading. It is a good thing if some of the library assistants are elder sisters in large families who have tumbled about among books, and if some of the questions asked of applicants for library positions relate to what they would give boys or girls to read. If an assistant in a large library shows a special fitness for work with children, it is best to give it into her charge. If all the assistants like it, let them have their share of it.

11 The question of a children's reading room depends on the size of the room for older readers, and how much it is used by them in the afternoons. Conditions vary so much in libraries that it is impossible for one to make a rule for another in this case.

#### SHORT LIST OF BOOKS AND ARTICLES SUGGESTED FOR READING, 1894.

Lists like those by Mr. Sawin, of Providence, belong to libraries and schools. The bibliography of children's books, although most interesting to a student, does not bear directly on their relation to libraries. Welsh's Bookseller of the last century, Lond., 1885, and Mrs. E. C. Field's Child and his book, Lond., 1891, with the articles indexed in the three volumes of Poole, are the best authorities on the subject.

ABBOTT, L., *ed.* Hints for home reading. 4+147 p. N. Y. 1880.

BEAN, M. A. Evil in unlimited freedom in the use of juvenile fiction. *L. j.* 4: 341.

BROOKS, M. H. Sunday-school libraries. *L. j.* 4: 338.

BURT, M. E. Literary landmarks. 8+152 p. Bost. 1889.

FLETCHER, W. I. Public libraries and the young. (*See* U. S. Bureau of Education Report on Public Libraries in the United States, 1876, 1: 412.)

FOSTER, W. E. How to use the public library. (*In his* libraries and readers. N. Y. 1883.)

GREEN, S. S. Personal relations between librarians and readers. *L. j.* 1: 74.

—— Sensational fiction in public libraries. *L. j.* 4: 345.

HALE, E. E., and others. Books that have helped me. N. Y. 1888.

—— How I was educated. N. Y. 1887.

HANAWAY, E. S. Children's library in New York. *L. j.* 12: 158, 185.



- HARDY, G. E. Five hundred books for the young. 6+94 p. N. Y. 1892.
- HAWTHORNE, J. Literature for children. *No. Am.* 138: 383; also in his *Confessions and criticisms*. Bost. 1887.
- HEWINS, C. M. Books for the young. N. Y. 1882.
- Yearly report on boys' and girls' reading, 1882. *L. j.* 7: 182.
- Home libraries of the Children's Aid Society. *L. j.* 16: 278.
- JAMES, H. P. Yearly report on reading of the young. *L. j.* 10: 278.
- Massachusetts Free Public Library Commission. Reports, 3 v. Bost. 1891-93.
- MATTHEWS, B. (Arthur Penn). Home library. (Appleton's home books.) 154 p. N. Y. 1883.
- REPPLIER, A. What children read. (*Atlan.* 59: 23; also in her *Books and men*. Bost. 1888.)
- SARGENT, J. F. Reading for the young. 4+121 p. Bost. 1890.
- SARGENT, M. E. Yearly report on reading of the young. *L. j.* 14: 226.
- SCUDDER, H. E. Childhood in English literature and art. *Atlan.* 56: 369, 471.
- Childhood in literature and art, with some observations on literature for children. 253 p. Bost. 1894.
- Childhood in modern literature and art. *Atlan.* 56: 751.
- STEARNS, L. E. Reading of the young. *L. j.* 19: 81, 136.
- WELLS, K. G. Responsibility of parents in the selection of reading for the young. *L. j.* 4: 325.
- WIGGIN, K. D. What shall children read? *Cosmopol.* 7: 355; also in her *Children's rights*.
- YONGE, C. M. What books to lend and what to give. Lond. 1888.

*Answers from librarians to questions on page 945—Part I.*

	1	2	3	4	5	6	7	8
CALIFORNIA.								
Alameda, Alameda free library; J. W. Harbourn, Los Angeles, Los Angeles public library; Tessa L. Kelso.	Yes..... No; I am convinced we are all on the wrong track by separating books and children in the library under the juvenile head.	Yes..... Linderfelt method for fiction; × sign for juvenile.	Finding list in preparation. Yes.....	No..... No.....	Yes..... Yes.....	14 years..... 12 years.....	Yes..... Yes.....	No. No.
Oakland, Oakland public library; Henry F. Paterson. Pasadena, Pasadena public library; Mrs. S. E. Merritt. Riverside, Riverside public library; Mary M. Smith.	Yes..... Fiction only..... No.....	Author and subject..... Dewey and Cutter (fiction). With the other books, according to Dewey system, and marked with an ×. By Dewey system.....	Partial; will have Rudolph index. We have a finding list. No.....	Yes..... No..... No.....	Yes..... Yes..... No; we have no rule.	do..... do..... do.....	No..... No..... Yes.....	No. No. No.
Sacramento, free public library; Caroline G. Hancock. San Diego, San Diego public library; Lu Younkia. Santa Barbara, free public library; Mrs. M. C. Rust. Santa Rosa; Bertha Kunli.	No..... Yes..... Yes..... Yes.....	do..... By authors..... No.....	Printed finding list..... No.....	No..... If in light covers. No.....	Yes..... We try to..... We have no rules..	do..... do..... 14 years.....	Yes..... Yes..... Yes.....	No. No. No. No.
COLORADO.								
Denver, mercantile library; C. R. Dudley. Denver, public library; J. C. Dana.	Yes..... Yes.....	No..... By Dewey system, with × prefixed.	No..... Finding list, but not complete. Am just about to put into use Hardy's "500 books for the young."	No..... No.....	Yes..... Some; would more if we had good accommodations for washing.	12 years..... No.....	Yes..... No.....	No. No.
CONNECTICUT.								
Ansonia, Ansonia library; F. J. Sterling.	Yes.....	Fiction; educational..	No.....	No.....	So far as possible..			

Bridgeport, Bridgeport public library; Mrs. A. Hills.	Yes.....	Roughly, as fiction, biography, science, travel, history, and miscellaneous.	Separate card catalog (dictionary) and an author list, in the general finding list. They are in a separate section of card catalog.	No.....	Yes.....	12 years.....	Yes.....	No.
Bristol, Bristol public library; E. Peck.	Yes.....	A1, juvenile stories; A2, juvenile travel; A3, juvenile science; A4, juvenile history; A5, juvenile biography; A6, juvenile literature; A7, juvenile religion and ethics. Only under the head of juveniles.	No.....	No.....	Occasionally.....	14 years.....	Yes.....	No.
Danbury, Danbury library; Mrs. C. H. Sanford.	Yes.....	No.....	We have a classified catalog in book form.	No.....	No.....	No.....	Yes.....	No.
East Hartford, Raymond library; Jessie W. Heydon.	No.....	No.....	No.....	No.....	We have no such rules, as there are no young children.	No.....	No.....	No.
Falls Village, David M. Hunt library; C. Belle Mathie.	Yes.....	Alphabetically, by authors.	No.....	No.....	No.....	No.....	No.....	No.
Hartford, Hartford public library; Caroline M. Hewins.	Yes.....	In 10 classes, with J. prefixed; J. 6, magazines; J. 10, history and biography; J. 20, religion; J. 30, morals and manners; J. 40, travel; J. 50, science; J. 60, useful arts; J. 70, fine arts and amusements; J. 80, stories; J. 90, fairy tales and poetry.	We have a printed author list, classified and annotated.	No.....	Yes.....	Ability to write on the schools name and residence.	Only one a week when the schools are in session.	Yes.
Middletown, Fensell library; L. F. Philbrook.	No.....	No.....	No.....	Some of them.	No.....	14 years.....	Yes.....	No.
Moodus, East Hadham free public library; N. E. Chaffee.	To quite an extent, not entirely.	They are not so definitely classified as the others, for history and travel are together. In some divisions juveniles are with others. Division of juvenile under fiction.	The children's books are separate in the printed finding list, and others suitable for them are marked with a star.	No.....	We try to.....	No.....	Yes.....	No.
New Britain, New Britain Institute; Lillian Whiting.	Yes.....	No.....	No.....	No.....	No.....	12 years.....	Yes.....	No cards; ledger charging system.
New Haven, New Haven free public library; W. K. Stetson.	Fiction is kept by itself.	Non-fiction has the Dewey classification.	Printed finding list.....	No.....	No.....	do.....	Yes.....	No.



*Answers from librarians to questions on page 945—Part I—Continued.*

1	2	3	4	5	6	7	8
CONNECTICUT—continued. New Haven, Young Men's Institute; W. A. Borden.	No.....	No.....	No.....	No need. It is not a free library.	No.....	They can take out and re- turn a dozen a day if they like. Yes.....	No cards.
New London, New London public library; M. A. Richardson.	No.....	J marked on general finding list.	No.....	.....	12 years	.....	No.
Norfolk, Norfolk library; Isabella Eldridge.	Yes.....	Dewey classification.....	A portion of them.	No.....	No.....	Yes.....	No.
North Granby, Cossitt li- brary; Kate E. Dewey.	Yes.....	No.....	No.....	Yes.....	12 years.	Yes.....	No.
Norwich, Otis library; Jon- athan Trumbull.	Yes.....	No separate catalog; in printed finding list, not separated.	No.....	Yes.....	.....do	Yes.....	No.
Salisbury, Salisbury library; H. E. Warner.	Yes.....	No.....	At present; the cov- ers will soon be removed. Yes.....	No.....	No.....	Yes.....	No.
South Norwalk, South Nor- walk public library; An- geline Scott.	No.....	Separate typewritten list.	Yes.....	No.....	12 years.	.....	No.
Stamford, Ferguson library; A. W. Paradise.	Yes.....	No separate catalog; in the general one.	No.....	Yes.....	No.....	Two a day.....	No.
Torrington, Torrington Li- brary Association; no signature.	Yes.....	No.....	No.....	No.....	No.....	Yes.....	No cards.
Waterbury, Silas Bronson library; H. F. Bassett.	No.....	No.....	No.....	As far as practica- ble.	No.....	One a day.....	No.
West Hartford, West Hart- ford public library; Eliza- beth S. Elmer.	No.....	No.....	Fiction is covered.	No.....	10 years.....	Yes.....	No cards.
West Winsted, Boardsley library; L. M. Carrington.	Mostly.....	No.....	No.....	Hints, rather than rules.	No.....	One book a week.	No.
Willimantic, public library; A. Dell Carpenter.	No.....	No.....	Yes.....	No.....	12 years.....	Yes.....	No.
GEORGIA. Atlanta, Young Men's Li- brary Association; Miss Wallace.	Yes.....	Alphabetically.....	Some of them.	.....	No.....	Yes.....	.....

ILLINOIS. Aurora, public library; Jas. Shaw.	Juvenile fiction is kept by itself.	They are classified with other books.	No.	No.	Attempts are made when the need is specially apparent.	15 years	Yes.	No.
	Yes.	History, travels, fiction.	No.	No.	No; they are clean children.	No.	Two on each card. Any number at 5 cents a week each.	No.
	Yes.	Alphabetically under authors. The classics, history, geography, science, travels, fiction, have been abolished.	No.	No.	Yes.	No.	Yes.	No; the issuing slips are different.
Decatur, free public library; no officer named. Chicago, Chicago, public library; F. H. Hild.	Yes.	No.	No.	No.	Yes.	8 years.	Yes.	No.
	Yes.	Alphabetically by authors.	Included in catalog of English prose fiction.	No.	Yes.	No.	Yes.	No.
	No.	No.	Children's book numbers are in italics in the finding list.	Part of them.	We have no rules, but children understand that library books must be handled with clean hands.	16 years.	Yes.	No.
Joliet, public library; no signature. Ottawa, Reddick's library; L. Macy. Peoria, Peoria public library; E. S. Willcox.	Yes.	Yes.	No.	No.	No.	12 years.	Yes.	No.
	Yes.	Alphabetically, by authors.	Yes.	No.	Yes.	do.	No.	No.
	Yes.	Yes; by subject; religion, science, mythology, literature, travels, history, biography, German, miscellaneous.	Separate card catalog.	No.	Yes.	No.	Yes.	No.
Quincy, free public library; Jas. Gallaher.	Yes.	History, biography, adventure, travel, fiction.	Printed finding list.	As they get soiled.	We try	Old enough to write application.	Yes.	No.
	Yes.	No.	No.	Not until visibly soiled.	Yes.	14 years.	Yes.	No.
INDIANA. Evansville, Willard library; Louisa Scantlin. Indianapolis, public library; Eliza G. Browning.	Yes.	No.	In printed finding list of all books.	No.	Yes.	12 years.	Two.	No.
	No.	Juvenile fiction is kept by itself; others are not separated.	Printed finding list, not of late date; new one to be issued.	No.	Yes.	10 years.	Yes.	No.

*Answers from librarians to questions on page 945—Part I—Continued.*

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INDIANA—continued.								
Richmond, Morrison library; Mrs. S. A. Wrigley.	Yes.....	We are about to classify.	Both.....		No.....	No.....	We issue to the head of a family.	No cards.
IOWA.								
Burlington, public library; no signature.	Yes.....	Yes; by author and subject.	No.....	No; some are.	No.....	12 years.....	Yes.....	No.
Davenport, Library Association; S. A. Biehn.	Yes.....	By authors.....	Not printed; not separate.	No.....	No; but if spoken to they seldom come with soiled hands again.	No.....	Yes.....	No.
Dubuque, Young Men's Library Association; no signature.	Yes.....	Not specially.....	No.....	No.....	It is not necessary.	No.....	Yes.....	No cards.
KANSAS.								
Topeka, free public library; Mrs. E. S. Lewis.	Yes.....	By subject and author.	No.....	Yes.....	We try to.....	No.....	Yes.....	No.
LOUISIANA.								
New Orleans, Howard Memorial library; William Beer.	No.....	With general classification.	No.....	No.....	Janitor has orders to direct those with dirty hands to the wash room.	13 years.....	We allow five books in the room.	
MAINE.								
Bangor, public library; Mary H. Curran.	No.....	By the Dewey classification.	No.....	No.....	Yes.....	No.....	Yes.....	No.
Portland, Portland public library; Alice C. Furbish.	Yes.....	No.....	No.....	Yes.....	Yes; in the reading room.	14 years.....	Yes.....	No.
MARYLAND.								
Baltimore, Enoch Pratt free library; Bernard C. Steiner.	Yes; mainly.....	Alphabetically under authors.	No.....	Not unless bound in white.	No.....	do.....	Yes.....	No.
MASSACHUSETTS.								
Boston, Boston public library; Mary A. Jenkins.	No.....	Each finds its place in the regular library classification.	No.....	No.....	No.....	12 years.....	Yes.....	No.



Only the fiction.	Fiction is divided into books for boys, books for girls, and books for children under 10.	They have Sargent's Reading for the Young, and a separate list, in the fiction catalog.	Yes.....	No.....	13 years.....	Two.....	No.
Brookline, public library; no signature.	Yes.....	Juvenile fiction has a separate alcove, arranged by authors.	Yes.....	Yes.....	12 years.....	Yes.....	No.
Brookline, Brookline public library; M. A. Dean.	Yes.....	No.....	Not until soiled or much worn.	Alas! No.....	13 years, or highest class in grammar school.	Yes.....	No.
Cambridge, Cambridge public library; Ahnira L. Hayward.	Yes.....	No.....	Not when new.	Yes.....	14 years.....	Yes.....	No.
Chelsea, Fitz public library; Madona J. Simpson.	No.....	Juvenile.	As soon as soiled.	No.....	do.....	Yes.....	No.
Clinton, Bigelow free public library; G. L. Greene.	Yes.....	With other books, by author and subject.	Yes; after first three months.	We have no rules except when a severe case seems to call for them.	12 years.....	Yes.....	No.
Concord, Concord free public library; Ellen F. Whitney.	No.....	An attempt was made to put juvenile travel, histories, stories, etc., together, but the alcove is now too crowded.	Yes.....	When we can.....	14 years.....	Yes.....	No.
Dedham, Dedham public library; F. M. Mann.	No.....	Under juvenile fiction.	Yes.....	No.....	do.....	No.....	No.
Fall River, Fall River public library; Wm. R. Ballard.	No.....	Card catalog.	Yes.....	Yes.....	do.....	Three.....	No.
Fitchburg, Fitchburg public library; P. C. Rice.	Yes.....	No.....	Yes.....	This is seldom necessary.	14 years, but at any age if parents will be responsible.	Yes.....	No.
Framingham, town library; Emma L. Clarke.	No.....	No.....	No.....	No rules; we sometimes require a washing of hands.	12 years.....	Yes.....	No.
Haverhill, Haverhill public library; Edward Capen.	Yes.....	No.....	No.....	We try to.....	14 years.....	Two.....	No.
Holyoke, Holyoke public library; no signature.	No.....	No.....	Yes.....	No.....	12 years.....	No.....	No.
Lancaster, Lancaster town library; K. M. Marvin.	Yes.....	We have a few lists made out by people interested in reading for the young.	Yes.....	We recommend clean hands.	14 years.....	Yes.....	No.
Lawrence, Lawrence public library; Mary F. Packard.	Yes.....	No.....	Yes.....	No.....	12 years.....	No.....	No.
Lincoln, Lincoln library; Miss H. A. Howes.	No.....	We have a separate card catalog and intend to print a finding list.	Not at first, but soon have to be.	We try to.....	do.....	No.....	No.
Lowell, city library; T. A. Chase.		They are classified with our other books, Dewey system and author index.				Our rule is not strictly enforced.	No.

## Answers from librarians to questions on page 945—Part I—Continued.

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MASSACHUSETTS—continued.							
Lowell, Middlesex Mechanics' Institute; A. L. Sargent.	Only in the catalog; children have access to the shelves.	No separate card catalog; lists of new books are printed in the local papers. Printed finding list.	No.	It is not necessary.	No.	Yes; if wanted.	No cards.
Lynn, free public library; J. C. Houghton.	Yes; general works, fiction, biography, history, poetry, science, and arts, travels.	Printed list prepared by librarian, but edition exhausted.	No.	As much as possible.	12 years.	Yes.	No.
Malden, public library; L. A. Williams.	No.	No.	No.	So far as possible.	do.	Yes.	No.
Marblehead, Abbot public library; Mrs. S. E. Gregory.	Like the other books, juvenile fiction is by itself.	No.	Most of them.	We charge a few cents for the second offense.	14 years.	Yes.	No.
Marlboro, public library; Sarah E. Coffing.	Travel, history, fiction.	Separate card catalog.	Yes.	No.	12 years.	Yes.	No.
Medford, public library; no signature.	Outlier classification.	No.	After they become soiled.	Yes.	No.	Yes.	No.
Natick, Morse Insitute; Natho L. Fox.	The same as others, and with them with the exception of fiction.	We have Sargent's finding for the Young, with the numbers on the margin.	As soon as soiled.	I demand that all books shall be handled with care. Any carelessness is punishable.	12 years.	Yes.	No.
New Bedford, free public library; E. C. Ingraham.	With other books, and classified as they are.	No.	In fiction, yes; in other departments, no.	I have never examined the fine ones if they injure the books.	14 years.	Yes.	No.
Newburyport, public library; John D. Parsons.	Not classified save as "juveniles."	No; they are entered on accession lists and bulletins as juvenile literature.	Yes.	No.	16 years.	Yes.	No.
Newton, free library; Elizabeth P. Thurston.	No.	We use Sargent's finding for the Young, with our call numbers.	Yes.	As far as practicable.	12 years.	Yes; seven.	
North Adams, public library; Miss Dunton.	Juvenile fiction same as other fiction, with J. prefixed. Other books classified also with J.	No.	No.	We talk constantly.	14 years.	Two.	They are punched with a letter J.

Northampton, free public Library.	No.....	Fiction and juvenile.....	Written lists and numbers affixed to Sargent's Reading for the Young. We have a printed bulletin. Edition exhausted.	Yes.....	Yes.....	12 years.....	Yes.....	No.....
North Easton, Ames free library.	Yes; in a separate alcove.	The children's alcove has four ranges. One has books of a miscellaneous character. The second and third are roughly divided into books for boys and books for girls, history and discovery are in the boys' range, science and natural history in the girls'. The fourth has biographies.	No.....	No.....	No, but there are fines for books badly soiled or torn.	14 years.....	Yes.....	No.
Peabody, Peabody Library; J. Warren Upson.	No.....	No.....	No.....	No.....	No.....	do.....	Yes.....	No.
Pittsfield, Berkshire Athenaeum; Nathan H. Ballard.	Yes.....	History, travel, amusements, stories, periodicals, science.	Printed finding list.....	About half. We have abandoned the practice after thorough trial.	No printed rules, but we suggest washing hands when needed.	15 years.....	Yes; no cards.	No cards
Quincy, Thomas Crane public library.	No.....	They are arranged with other books, such as history, biography, travels, literature, poetry, and fiction.	do.....	Yes.....	No.....	14 years, and all children of A and B, grammar grade.	No.....	No.
Salem, Salem public library; Gardner M. Jones.	No.....	Dewey classification and J.	No.....	No.....	Only in reading room.	12 years.....	Yes.....	No.
Shelburne Falls, Arns Library; Flora A. Halligan.	No.....	As juveniles in printed catalog.	No.....	No.....	No.....	No.....	No.....	No.
Somerville, Somerville public library; Harriet A. Adams.	Mostly.....	They are not classified.	They have none.....	Yes.....	Yes.....	14 years.....	No.....	No.
Southbridge, Southbridge public library; A. Jennette Comins.	Yes.....	Under history, biography, travel, fiction.	No.....	Yes.....	Yes.....	No.....	Yes; I think a child should be allowed but one book a week.	No.
Springfield, City Library Association; William Rice.	Yes.....	Yes; broadly, as far as space permits.	Both.....	No.....	Yes; in extreme cases.	14 years.....	Three.....	No.
Stonham, Stonham public library; M. H. Boyce.	No.....	No.....	They are distinguished by a star.	Not generally; only the oldest ones.	No.....	10 years.....	No.....	No.



*Answers from librarians to questions on page 945—Part I—Continued.*

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MASSACHUSETTS—continued. Taunton, public library; E. C. Arnold.	They are indicated by daggers in the gen- eral finding list.	No.....	Yes; though we are ex- periment- ing with new bind- ing, which will obvi- ate that necessity. Yes.....	We try, but don't always succeed.	15 years.....	Yes.....	No.
Waltham, Waltham public library; Mrs. M. E. Bill. Warren, Warren public li- brary; no signature. Weymouth, Tuff's library; C. A. Blanchard.	Yes.....  Yes; like the others, Dewey system. Classified with the other books.	Printed finding list..... No.....	Yes..... No.....	Yes..... Sometimes We sometimes ask a child to wash his hands before giving him a book.	14 years..... No.....	Two..... Yes.....	No. No.
Woburn, public library; no signature.	No.....	We have Sargent's Reading for the Young, and Miss James's school list, to which our num- bers are added. They have a separate place in the printed catalog.	Yes.....	If we can.....	12 years.....	Yes.....	No.
Worcester, free public li- brary; Samuel Sweet Green.	No.....	No.....	Not until the covers are much defaced.	Yes; as well as we can.	No limit, but the discre- tion of the head of the circulat- ing depart- ment.	Two.....	Yes.
MICHIGAN. Bay City, Bay City public library; Annie F. Parsons.	By subjects: Most of the histories, bio- ographies, books on sciences and trav- els are where the children see them and select for them- selves.	We use the Sargent catalog, checking our books in red.	No.....	Sometimes.....	12 years.....	Yes.....	No.
Detroit, public library; H. M. Utley.	No.....	No.....	No.....	No.....	14 years.....	Yes.....	No.

Grand Rapids; Lucy Ball.....	Yes.....	Arranged alphabetically by authors.	There is a list for the public schools, but this is not a complete catalog of juvenile books in the library.	No.....	No.....	10 years.....	If a child draws a book a day he is limited to two a week, unless otherwise requested by parent or teacher.	No.
Kalamazoo.....	No.....		No.....	No.....	No.....	6 years.....	Two.....	No.
MINNESOTA.								
Minneapolis; J. K. Hosmer..	No.....	No.....	Fiction and juveniles are in one finding list.	No.....	Not to any extent.	14 years, except to pupils recommended by teachers.	Yes.....	No.
St. Paul, St. Paul public library; Helen J. McCalne.	Yes.....	Juvenile literature.		Not generally.	No.....	No.....	Yes.....	No.
MISSOURI.								
Kansas City, Kansas City public library; Carrie W. Whitney.	No.....	Yes.....	Separate card catalog, also included in dictionary catalog.	Yes.....	No.....	No.....	Yes.....	No.
St. Louis, St. Louis public library; F. M. Crandean.	Yes.....	Science, history, biography, travels and adventure, fiction.	Separate card catalog.	No.....	Only for books used in the library.	No.....	Yes.....	Yes.
MONTANA.								
Helena, Helena public library; Frank C. Patter.	No.....	With rest of library. Cutter classification.	We expect to make a classified printed list. Hardy's "500 books for the Young" will be used for the present.	No.....	We are growing more and more particular.	12 years; we expect to abolish, but require signature of parent for under 14.	Yes.....	No.
NEBRASKA.								
Omaha; Jessie Allan.....	Fiction is.....	They are kept with other books.	We have a printed list.	No.....		10 years.....	Two.....	No.
NEW HAMPSHIRE.								
Concord, public library; D. F. Secomb.	Yes.....	No.....	No.....	No.....	No; we examine their hands sometimes and recommend soap and water.	10 years.....	Two.....	No.

*Answers from librarians to questions on page 945—Part I—Continued.*

	1	2	3	4	5	6	7	8
NEW HAMPSHIRE—cont'd.								
Dover, public library; Caroline H. Garland.	Yes.....	Fiction and part of travel are by themselves; but I like them better shelved with their classes.	No; but children easily use the general card catalog.	Light-bound books at once; others as they need.	Yes.....	12 years.....	Two; rule not always enforced.	No.
Manchester, Manchester City library; Mrs. M. J. Buncher.	Not exclusively.	No.....		Yes.....	No.....	16 years.....	Yes.....	No.
Nashua, public library; Harriet Crombie.	Yes.....	Yes; under juvenile..	They have a separate card catalog and are in the printed catalog.	No.....	No.....	do.....	Two.....	No.
Portsmouth, free public library; R. E. Rich.	No.....	Only under juvenile..	No.....	No.....	We can not.....	12 years.....	Yes; but the librarian checks excesses in school children.	No.
NEW JERSEY.								
Newark, Newark public library; F. F. Hill.	No.....	Yes; like all other books, and with J.	No; use Sargent's Reading for the Young with our call number.	When soiled.	Not offensively.....	14 years.....	Yes.....	No.
Patterson, free public library; G. F. Winchester.	No.....	Same as other books.	No.....	As a rule, no.	No. We fine people who soil or use books unreasonably.	do.....	Yes.....	No.
Plainfield, public library; E. L. Adams.	Their story books are.	By Dewey system.....	No; we have a selected list kept at the "children's table."	No.....	We have not found it necessary.	do.....	Yes.....	No.
NEW YORK.								
Albany, home libraries; Mary S. Cutler.	They are all children's books.	No.....	Librarian has card-catalog, each child a written list in alphabetical order.	No.....	Clean hands are encouraged.	About 8 to 15 years.	One book, one number of a periodical.	No cards.
Brooklyn, Pratt Institute; Mary W. Plummer.	Yes; for children under 14.	Like the rest of the library, by the Dewey system.	Typewritten finding list.	Yes.....	Yes; in reading room.	No.....	Two.....	Yes; under 14, light brown stamped children's card.
Brooklyn, Union for Christian Work; Fanny Hull.	No.....	Yes; same as other books, Dewey classification.	Yes; children's list of authors and titles at the end of the card catalog. They are also in the general card catalog.	When soiled.	Partly.....	12 years.....		



Buffalo, Buffalo library; J. N. Larned.	Fiction is kept by it self.	.....	"Books for young readers" was printed in 1881. Juvenile books are started in our printed finding list.	No.....	In regard to books used in the library.	No.....	600 free tickets are distributed in the public schools.	Yes; school tickets are.
Gloversville, Gloversville free library; A. L. Peck.	Yes.....	History and biography, poetry, science, travel fiction, prose literature.	Printed finding list.	Yes.....	We enforce the rule strictly. Children having dirty hands must wash them before they apply for books. A lavatory is connected with each room.	12 years.....	Yes. However, I frequently call the attention of parents, teachers, and children to the evil effect of too many books.	No.
Newburg, Newburg free library; C. Estabrook.	No.....	No.....	No.....	No.....	Yes.....	Ability to read.	Not to children under 10.	No.
New York, Aguilar library; no signature.	Yes.....	Dewey classification.....	Printed list.....	All except new books.	Yes.....	11 years.....	Yes.....	No.
New York, New York free circulating library; Ellen M. Goe.	Fiction only.....	With author letter and book number.	No; except fiction. In each class however, all books recommended to young readers are distinguished by an asterisk following the book number.	Not at first. We think that an attractive cover teaches careful use of books.	No absolute rule; but we try to influence the children in that respect.	12 years.....	Yes; in our library the children have entered into an engagement with the librarian that every fifth book shall be of her selection and other than fiction.	No.
New York; no name of library or signature.	No.....	In the catalog by subjects.	The juvenile fiction is separately classified in our finding list of fiction, and the other juvenile literature cataloged by classes in our finding list of general works.	Yes.....	Yes.....	No.....	Yes.....	No.

Answers from librarians to questions on page 945—Part I—Continued.

	1	2	3	4	5	6	7	8
NEW YORK—continued.								
New York, Y. W. C. A.; Sarah W. Cattell.	Yes.....	No; they are arranged alphabetically by author under class mark J.	No; they are in the general card catalog.	Not until soiled or worn.	No.....	14 years.....	Yes.....	No.
Poughkeepsie, John C. Sickley.	No.....	No.....	No.....	No.....	Not unless books are defaced.	No.....	Yes.....	No.
Troy, Troy Young Men's Association; De Witt Clinton.	Yes.....	Alphabetically by authors, etc.	We have a printed finding list.	No.....	No.....	12 years; not strictly enforced.	Yes.....	No.
Utica, school district library; Elizabeth A. Jacobs.	No.....	Alphabetically by title and author.	They are kept by themselves in the catalog.	No.....	We try to.....	10 years.....	No.....	No.
OHIO.								
Cleveland, Cleveland public library; Wm. H. Brett.	Stories are by themselves, alphabetically by authors.	Books of other classes are with books of the same sort for older people.	We have no separate lists for children.	No.....	As far as possible.....	14 years.....	2 story books.	No.
Dayton, public library; no signature.	Yes.....	Same as other books.....	No.....	No.....	Do not know how; occasionally, we remonstrate.	10 years.....	Yes.....	No.
Springfield, Warder public library; R. C. Woodward.	Yes.....	Like the rest of the library, but with separate class number.	Separate card catalog.	No.....	We try to.....	10 to 15 years.	Yes.....	Yes.
Tolodo, public library; Mrs. F. D. Jerniin.	Stories only.....	With the rest of the library.	do.....	No.....	Yes.....	10 years.....	Two.....	No.
PENNSYLVANIA.								
Allegheny, Carnegie free library; Wm. M. Stevenson.	Fiction is.....	With other books under the Dewey classification.	No.....	A few are.....	Yes.....	12 years.....	Yes.....	No.
German town, Friends' free library; William Kite.	Yes.....	No.....	No.....	No.....	Not strictly.....	do.....	No.....	No.
Philadelphia, Apprentices' Library Company; C. M. Underhill.	No.....	With other books under the Dewey classification.	No.....	No.....	Very often.....	Ability to read.	Two.....	No.
Scranton, Scranton public library; Henry J. Carr.	No.....	Like other books.....	No.....	No.....	Same as for any book takers.	No.....	Yes.....	No.
Wilkesbarre, Ostrachout free library; Hannah F. James.	Yes.....	Like other books with J. prefixed.	No; excepting a list for school use.	Yes.....	We try to.....	12 years; but encourage children to use their parents' cards.	Yes.....	No.

RHODE ISLAND. Newport, Newport public library; no signature. Pawtucket, Pawtucket public library; Minerva A. Sanders.	No.....	They are with fiction, but on separate shelves.	Manuscript catalogs of juvenile books.	Not unless badly worn or soiled.	Yes.....	Yes.....	Yes.....	15 years.....	No.....	At the discretion of the librarian.	No.....
	Largely.....	By the Dewey system.	Neither; our shelves are open and have printed labels.	Yes.....	Yes.....	Yes.....	Yes.....	No; each pupil in the public schools has a card marked "school."	At the discretion of the librarian.		No.....
	Yes.....	Yes.....	No.....	Yes.....	Yes.....	Yes.....	Yes.....	14 years.....	As yet.....		No; but the school card is.
VERMONT. Burlington, Fletcher free library; Sarah C. Hagar.	No.....	Not separately.....	I have prepared a school catalog of desirable books.	Yes.....	I can not.....	Yes.....	Yes.....	do.....	Yes.....		No.....
	Mostly.....	Fiction, travels, science, biography.	Written lists.....	Fiction, all ways; others generally.	Occasionally.....	Yes.....	Yes.....	14 years; younger children take books on cards of parents; books, etc., etc.	Yes.....		No.....
	No.....	With rest of library.....	No.....	No.....	We try to. We require books to be wrapped in paper.	No.....	No.....	14 years.....	No.....		No.....
WASHINGTON. St. Johnsbury, St. Johnsbury Athenaeum; Louise L. Bartlett. Vergennes, Mary P. Tucker.	Yes.....	Alphabetically.....	No.....	Yes.....	No.....	No.....	No.....	7 years.....	Not usually.....		No.....
	Yes.....	Dewey system.....	Typewritten; will soon be printed.	Yes.....				12 years.....	Yes.....		No.....
	No.....	Like rest of library, with X added to number.	Printed lists.....	No.....	Not very well.....			No.....	Yes.....		No.....
WISCONSIN. Milwaukee, Milwaukee public library; Theresa H. West.	No.....	Like rest of library, with X added to number.	Printed lists.....	No.....	Not very well.....			No.....	Yes.....		No.....



## Answers from librarians to questions on page 945—Part II.

	9	10	11
CALIFORNIA.			
Alameda, Alameda free library; J. W. Harbournne.	Alcott, Alger, Castlemon, Douglas, Kellogg, Optic.....	They are encouraged to consult librarian and assistants.	No.
Los Angeles, Los Angeles public library; Tessa L. Kelso.	.....	Interesting parents, teachers, and the children themselves. We have a special assistant, and they are encouraged to consult the librarian and all the assistants. They are encouraged to consult the librarian.....	No.
Oakland, Oakland public library; Henry F. Paterson.	Alcott, Butterworth, Coffin, Champney, Trowbridge, Yonge's histories.	Personal suggestion: we try to select the very best reading. I would exclude Trowbridge if I could.	No; they use the large reading room.
Pasadena, Pasadena public library; Mrs. S. E. Merritt.	Alcott and Trowbridge.....	Help is always willingly rendered by librarian and assistants.	No.
Riverside, Riverside public library; Mary M. Smith.	Alcott, Alger, Castlemon, Finley, Henty, Sophie May, Optic.	None; we recommend when there is opportunity to do so.	No.
Sacramento, free public library; Caroline G. Hancock.	Alger, Castlemon, Ellis, Optic.....	Personal advice mainly; we have Sargent and Bart; the ambitious readers are asked to choose books; no special assistant.	No.
San Diego, San Diego public library; Ln Younklin.	Alcott, Alger, Coffin, Fenn, Henty, Knox, Ober, Towle, Mark Twain.	By personal interest in them; they consult the librarian and assistants.	No.
Santa Barbara, free public library; Mrs. M. C. Rust.	Alcott, Alden, Henty, Stoddard, Trowbridge.....	They are encouraged to consult the librarian by teachers, who sometimes send lists.	No.
Santa Rosa, Bertha Kumili..	Alcott, Coffin, Ewing, Henty, Optic, Reid, etc.....	No methods; they are encouraged to consult the assistants.	No.
DENVER, mercantile library; C. R. Dudley.	Alger, Castlemon, Henty, Optic.....	Keep the quality of books fairly high; talk to them when they come to the library; print special lists; get the teachers to look after them; they are encouraged to consult librarian and assistants.	No; wish we had.
Denver, public library; J. C. Dana.	Alcott, Ballantyne, Coffin, Fenn, Kellogg, Knox, Trowbridge, Mark Twain; we do not have Optic, Castlemon, Alger, Elsie books.	Calling attention to books useful and helpful, which I have read myself. I frequently converse with the children, and try to make them feel that I am a friend.	No; we believe that the quiet order and politeness we exact from them teach many most valuable lessons.
CONNECTICUT.			
Ansonia, Ansonia library; F. J. Sterling.	Alcott, Optic, Henty.....	We have tried, or are trying most of the popular methods, but have little faith in anything except direct personal influence; tried having a special assistant and window; find that children have their favorites, and it is better to let them go to the assistant they like best.	No.
Bridgeport, Bridgeport public library; Mrs. A. Hills.	Abbott, Alcott, Alden, Ballantyne, Bolton, Burnett, Butterworth, Champney, Church, Coffin, Fenn, Hale, Ellis, Henty, Kellogg, Kingston, Knox, Lillie, Sophie May, Moleworth, Ous. Reid, Scudder, Margaret Sidney, Stephens, Stoddard, Trowbridge, Verne, Woolsey.	Such personal advice as the librarian finds occasion to give.	No.
Bristol, Bristol public library; E. Peck.	Henty, Roe, Columbian histories.....	We have but one librarian, and they are all expected to consult her.	No.
Danbury, Danbury library; Mrs. C. H. Sanford.	Alcott, Alger, Castlemon, Ellis, Kellogg, Perry, Optic, Mark Twain.	We have no children under 14 and not more than half a dozen under 18.	No.
East Hartford, Raymond library; Jessie W. Hayden.	Alcott, Alger, Cooper, Henty, Kellogg, Optic, Stoddard, Whitney.		

Falls Village, David M. Hunt library; C. Belle Maltbie, Hartford, Hartford public library; Caroline M. Hewins.	Alcott, Alger, Coolidge, Henty	No special methods; no assistant.	No.
Middletown, Russell library, L. F. Philbrook.	Alcott, Alden, Burnett, Coffin, Coolidge, Fenn, Henty, Kellogg, Meade, Molesworth, Munroe, Stoddard, Mark Twain, Uncle Tom's Cabin, Buck Beauty, Verne, and fairy tales. Boarding-school stories are very popular and there is a special list of them.	General friendliness of librarian and assistants, books on open shelves, talks in school, and cooperation with teachers. Both assistants and books are carefully chosen. The children have access to about a hundred books at a time on the open shelves. The supply is constantly renewed. The printed outdoor list was ready as soon as the library was open, and has been of the greatest use. Children make out the lists among themselves, and the librarian uses her own judgment about finding books "out" and substituting others better suited to the age and intelligence of the child.	No.
Moodus, East Haddam free public library; N. E. Chaffee.	Alcott, Burnett, Coolidge, Cooper, Henty, Kellogg, Marryat, May, Stowe (Uncle Tom's Cabin), Trowbridge, Verne.	An interest in each child and his needs as far as possible; they show a willingness to be helped.	No.
New Britain, New Britain Institute; Lilian Whiting.	Alcott, Burnett, Coffin, "H. H." Kellogg, Knox, Trowbridge.	Encouraged to consult the librarians.	No.
New Haven, New Haven free public library; W. K. Stetson.	Alcott, Burnett, Coffin, Henty, Stoddard, Trowbridge, Wiggin.	Encouraged to consult librarian and assistants.	No.
New Haven, Young Men's Institute; W. A. Borden.	Alcott, Alger, Castlemon, Finley, Henty, Kellogg, Optic, Ray, Verne.	No methods; they have access to shelves; we keep our juvenile books with all the others because we prefer the children to see and handle other books than those specially written for them. Twelve per cent of last year's circulation was among boys and 6 per cent among girls. They are encouraged to consult the librarian and assistants.	No.
New London, New London public library; M. A. Richardson.	Alcott, Alden, Champney, Coolidge, Coffin, Ellis, Finley, Henty, Kellogg, Ker, Sophie May, Munroe, Trowbridge, Mark Twain.	They are helped by the librarian; they occupy the general reading room almost to exclusion of adults.	No.
Norfolk, Norfolk library; Isabella Eldridge.	Alcott, Burnett, Coolidge, Edgeworth, Eggleston, Finley, Page, Richards, Seudder, Trowbridge, Wiggin.	No special methods; they are encouraged to consult the librarian.	No.
North Granby, Cossitt library; Kate E. Dewey.	Alcott, Coffin, Coolidge, Henty, Trowbridge, Andersen, Grimm, and other fairy stories. Alger and Optic much called for, but kept in diminishing supply.	They are encouraged to consult regarding books; we also aim to supply them through the teachers.	No.
Norwich, Otis library; Jonathan Trumbull.	Alcott, Coolidge, Coffin, etc., Howell's Library of Adventure is very popular.	The librarian takes great interest in them, and has great tact and judgment in recommending books.	No.
Salisbury, Salisbury library; H. E. W. Warner.	Alcott, Burnett, Coffin, Cooper, Mrs. Ouster, Kellogg, Ker, Knox, Sophie May, Munroe, Optic, Mayne Reid, Margaret Sidney, Stoddard.	The librarian assists them personally.	No; the general reading room is open to children on good behavior.
South Norwalk, South Norwalk public library; Angeline Scott.	Alcott, Coolidge, Lillie, Optic.	No methods; they make their own selection.	No.
Stamford, Ferguson library; A. W. Paradise.	Alcott, Alger, Henty, Optic, Trowbridge.	No methods.	No.
Torrington, Torrington Library Association; no signature.	Alcott, Castlemon, Champney, Ellis, Kellogg, Optic, Stephens.	Librarian and assistants render aid if allowed to do so; teachers do something.	No; in the new building there will be rooms for children and classes.

## Answers from librarians to questions on page 945—Part II—Continued.

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CONNECTICUT—continued.			
West Hartford public library; Elizabeth S. Elmer.	Alcott, Bolton, Burnett, Carroll, Ewing, Henty, Knox, Perry, Scudder, Stoddard, Uncle Tom's Cabin, Trowbridge. Bound volumes of children's magazines are much used.	They are encouraged to read something besides stories...	No.
West Winsted, Beardsley library, L. M. Carrington.	Batterworth, Castlemon, Ellis, Optic, Stoddard, Trowbridge.	Observing their tastes, and giving as little "advice" as possible.	No.
Willingham, public library; A. Dell Carpenter.	.....	No methods; they are encouraged to consult the librarian.	No.
GEORGIA.			
Atlanta, Young Men's Library Association; Miss Wallace.	Abbott, Alcott, Burnett, Cooke, Cooper, Ewing, Fenn, Harris, Meade, Optic, Verne.	.....	
ILLINOIS.			
Aurora, public library; Jas. Shaw.	Alcott, Alger, Burnett, Castlemon, Ellis, Finley, "Fanny," Trowbridge.	When a desire to read for a purpose is observed in anyone, we do what is possible to direct and develop it, by directing attention to suitable books. We have found Sargent's Reading for the Young very useful. Our junior assistant is making the children her special field.	No.
Alton, public library; Florence Doller.	Alcott, Burnett, Castlemon, Cooper, Ellis, Finley, Henty, May, Optic, Stoddard, Fairy Tales.	When they ask, I direct them, and they read what I select. It is rare for parents to send lists.	No; they have access to the cases.
Belleville, Belleville public library; F. J. Staufenbiel.	Abbott, Alcott, Arthur, Ballantyne, Castlemon, Coffin, De Mille, Eggleston, Ellis, Hill, Kellogg, Optic, Richards, Finley, Wesselhoft, St. Nicholas, and Chatto-box. Many German books for children.	The superintendent of schools has made an extract from the printed catalog for the several grades of schools, and teachers recommend books; the children consult this list, the catalogue or librarian or assistants.	No; the board of directors intends to exclude children from the general reading room.
Decatur, free public library; no officer named.	Alcott, Alger, Finley, Henty.	Advice given at desk; they are encouraged to consult any of the library force.	No; a separate table.
Chicago, Chicago public library; F. H. Hild.	We have never kept statistics of this kind.	No special assistant.	No.
Galesburg, public library; Eliza Phillips.	Alcott, Butterworth, Champney, Coolidge, Coffin, Finley, Henty, Optic, Margaret Sidney, Uncle Tom's Cabin.	Children are encouraged to consult the librarian, and frequently she is asked to select books for them.	No.
Joliet, public library; no signature.	Abbott, Alger, Castlemon, Coolidge, Finley, Henty, Sophie May, Optic, Stowe, Trowbridge.	We have no special assistant.	No.
Ottawa, Reddick's library; L. Macy.	No special author.	Advising mothers.	No.
Peoria, Peoria public library; E. S. Wilcox.	Alcott, Ballantyne, Champney, Coffin, Cooper, Eggleston, Ellis, Henty, Knox, Little, Mead, Munroe, Richards, Stoddard, Trowbridge, Lang's Fairy Tales.	Personal suggestion; best and newest books are exposed in a case behind wire net, no special assistant.	No.
Quincy, Free public library; Jas. Gallager.	Alcott, Burnett, Ellis, Henty.	Suggestion to readers, parents, or friends; they are encouraged to consult librarian and assistants.	No; juvenile department in large reading room.



Rockford, public library; no signature.			No.
INDIANA.			
Evansville, Willard library; Louisa Scantlin.	Albott, Abbott, Alger, Burnett, Butterworth, Champey, Coolidge, Finley, Henry, Kellogg, May, Optie, Pyle, Stoddard, Trowbridge.	We use lists by Sargent, Hewins, Savin, Hardy, and others; and is given freely; we have no special assistant.	No.
Indianapolis, public library; Eliza G. Browning.	Alcott, Alger, Coffin, Eggleston, Honty, Lillie, May, Munroe, Optie.	Encouraged to consult the librarian and assistant.....	No.
Richmond, Morrison library; Mrs. S. A. Wrigley.	Alcott, Alger, Castlemon, Coolidge, Ellis, Finley, Honty, Kellogg, Lillie, May, Reid, Stoddard, Wiegman.	There is an information clerk whose duty it is to give help to all who apply for it; the librarian and assistants also give constant help.	No.
IOWA.			
Burlington, public library; no signature.	Alcott, Alger, Burnett, Castlemon, "Pansy," and others.	They choose for themselves; we are glad to advise them..	No.
Davenport, Library Association; S. A. Biehon.	Alcott, Castlemon, Trowbridge; fairy tales.....	None; they generally consult each other .....	No.
Dubuque, Young Men's Library Association; no signature.	Alcott, Alger, Burnett, Carey, Castlemon, Kingston, May, Reid, Trowbridge.	They frequently read what I ask them to read; they are allowed to ask for any help they wish or select themselves, but as soon as they come regularly I try to select for them.	No; but a separate reading table.
KANSAS.			
Topeka, free public library; Mrs. E. S. Lewis.	Alcott, Alger, Castlemon, Finley, Optie, Trowbridge..	Different methods .....	No; they are perfectly quiet in the general reading room.
LOUISIANA.			
New Orleans, Howard Memorial library; William Beer.	Alcott. It is a reference library.....	No special method; they consult all.....	No.
MAINE.			
Bangor, Mary H. Curran.....		Advice of librarian and assistants .....	Weset apart tables for ladies and children.
Portland, Portland public library; Alice C. Furbish.	Alcott, Coffin, Coolidge, Finley, Honty, Kellogg, May, Trowbridge.	Librarian and assistant are ready to give all advice required.	No; separate tables.
MARYLAND.			
Baltimore, Enoch Pratt free library; Bernard C. Steiner.	Alcott, Alger, Burnett, Castlemon, Coolidge, Ellis, Ewing, Henry, Kellogg, May, Optie, Stowe, Mark Twain, Vorne, Yonge; fairy tales.	The children are encouraged to ask about their reading, and the entire library force stands ready to help them in every possible way.	No.
		Counsel, if called for; the delivery assistants are always glad to help them select books.	No.

## Answers from librarians to questions on page 945—Part II—Continued.

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MASSACHUSETTS.			
Boston, Boston public library; Mary A. Jenkins.	Alcott, Coffin, Douglas, Fenn, Henry, May, Trowbridge, Yonge.	The young people are encouraged to ask help of the librarian or catalog assistant for their school work and also for their general reading. We avail ourselves of every opportunity to "lend a helping hand," or speak a word in season. We keep a shelf full of assorted and selected good reading, where they can see and look over the books if they wish, and in this way they get acquainted with many books and authors. Books are carefully examined before they are accepted, and many are rejected. We do not warn against books, but endeavor to supply so much that is good that the others will be forgotten. We work steadily upon our plan of teaching how to use our card catalogs, and we are sure that the plan is producing good results. The range of reading is wider, and the library influence is stronger, and an intelligent use of the library has rapid growth. Any of the library force is always ready to suggest books, pick them out for children, or help them to make lists. Catalog, bulletins, and Sargent. The entire staff is always ready to do them service. Under the new régime, the children seem to feel that the librarian is their special property. We have a large revolving case kept full of good juveniles. When a child fails to draw a book he understands he may select from the case. Many always select from the case at once, as we are glad to allow. Many parents, too, are glad to select for children from it, knowing those books are safe.	No.
Brockton, public library; no signature.	Alcott, Alger, Burnett, Butterworth, Castlemon, Coffin, Coolidge, Henry, Optic, Trowbridge; fairy tales.	No special methods; they are encouraged to consult librarian and assistants. Through the teachers; they are encouraged to consult the librarian.	Yes.
Brookline, Brookline public library; M. A. Bean.	Alcott, Alger, Castlemon, Coolidge, Ellis, Ewing, Henry, May, Meade, Moksworth, Optic, Trowbridge; fairy tales.	I use Sargent's Reading for the Young, giving our numbers in ink and select many books myself. I hold myself in readiness to help old and young. No methods; no special assistant.	No.
Cambridge, Cambridge public library; Almira L. Hayward.	Optic and Alger would be if we had enough to supply the demand, but we have but one of each. If we had none, better books would be more read. I would if I could put all the children's books around their reading room, give them a wide-awake attendant, and let them choose their own books. Much time is wasted trying to get books "out," trying again and again and staying an hour instead of five minutes.		No; they use the large general reading room, where two tables are set apart for them. Near by are two or three shelves of children's magazines.
Chelsea, Fitz public library; Medora J. Simpson.	Alcott, Alger, Optic, etc.		Yes; since June, 1890 (see reports).
Clinton, Bigelow free public library; C. L. Greene.	Alcott, Alden, Alger, Kellogg, Optic, Verne. The committee have not added any of Optic's or Alger's books for ten years, but the old ones are read and reread until they are nearly worn out.		No.
Concord, Concord free public library; Ellen F. Whitney.	Alcott, Burnett, Coolidge, Henry, Kirk Munroe		No; the children are allowed the use of the reading room if they are quiet.
Dedham, Dedham public library; E. M. Mann.	Alger, Castlemon, Finley, Kellogg		No.

Fall River, Fall River public library; Wm. R. Ballard.	.....	None	None	No.
Fitchburg, Fitchburg public library; P. C. Rice.	.....	W. J. Abbot, J. Abbott, Alcott, Castlemont, Henty	We make out lists; we have not a special assistant.	No.
Framingham, town library; Emma L. Clark.	.....	.....	No special methods; they can at any time consult the librarian or assistants.	No; a long table in the main hall.
Haverhill, Gaverhill public library; Edward Capen.	.....	Alcott, Alden, Alger, Castlemont, Coolidge, Cox, Ellis, Kellogg, Lang, Lillie, May, Meade, Molesworth, Pansy, Phelps, Richards.	No special methods; no special assistant; they consult if they wish.	No.
Holyoke, Holyoke public library; no signatures.	.....	If left to choose, boys take Alger, Ellis, Optic; girls, Alcott, Finley, Stowe.	No special methods; quiet suggestion; lists sent to teachers.	No.
Lancaster, Lancaster town library; K. M. Marvin.	.....	Alcott, Kellogg, Optic, May, Trowbridge	Sargent's Reading for the Young; they are encouraged to consult the librarian.	No.
Lawrence, Lawrence public library; Mary F. Packard.	.....	Alcott, Alger, Ellis, Castlemont, Optic	No methods; the older children are encouraged to consult the librarian and assistants, but little is done for the younger ones. We have teachers' cards and Sargent's Reading for the Young with numbers filled out and sent to the schools.	No.
Lincoln, Lincoln library; Miss H. A. Howes.	.....	.....	Teachers recommend books, parents often select for their young children, and the librarian or assistant is supposed to give help whenever it is needed.	No.
Lowell, city library; T. A. Chase.	.....	We have no satisfactory data	No methods as yet; the librarian and assistants are easily accessible to our readers, and do a great deal of personal work among them.	No.
Lowell, Middlesex Mechanics' Institute; A. L. Sargent.	.....	Alcott, Burnett, Coolidge, Fenn, Henty, Molesworth, Trowbridge.	Personal suggestion and adding only good books	The children have a long table in the library, where attractive books are always kept. The table has a raised center and sloping sides to form a comfortable reading desk.
Lynn, free public library; J. C. Houghton.	.....	Alcott, Alden, Alger, Buckley, Butterworth, Castlemon, Champney, Coffin, Ellis, Farrar, Hale, Knox, Ober, Optic, Margaret Sidney.	No special assistant; the librarian and assistants make special efforts to aid the young.	No.
Malden, public library; L. A. Williams.	.....	Alcott, Finley, Henty, Trowbridge	I do what I can, especially before and after school, leaving other work for the purpose.	No.
Marblehead, Abbot public library; Mrs. S. E. Gregory.	.....	Alcott, Alger, Burnett, Castlemont, Champney, Coffin, Henty, Knox, Lillie, Marshall, May, Meade, Molesworth, Optic, Pansy, T helps, Sidney, Stoddard, Trowbridge, Wiggin.	Helping them select personally	No; they use the one connected with the library.
Marlboro, public library; Sarah E. Coting.	.....	Alcott, Coffin, Henty, Kellogg, May, Optic	No special methods; they are encouraged to consult the librarian.	No; there is a students' room for scholars of high and grammar schools. They have tables.
Medford, public library; no signature.	.....	Alger, Castlemont, Coffin, Coolidge, Henty, Sidney, Stoddard, Wiggin.	Personal advice; they are encouraged to consult the librarian.	No; the children are expected to sit in the room with older readers and not disturb them. If the child becomes restless he is asked to leave the room. This seldom occurs.
Natick, Morse Institute; Nellie L. Fox.	.....	W. J. Abbot, Alcott, Alger, Castlemont, Coffin, Optic, "Pansy"	Star (?) books for the young. They are encouraged to ask questions of the desk attendant, whether librarian or assistant, and are always given all the attention necessary. Our children need more assistance often than the older patrons.	



## Answers from librarians to questions on page 945—Part II—Continued.

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MASSACHUSETTS—continued. New Bedford, free public library; R. C. Ingraham. Newburyport, public library; John D. Parsons. Newton, free library; Elizabeth P. Thurston. North Adams, public library; Miss Dunton. Northampton, free public library. North Easton, Ames free library.	No data..... Alcott, Castlemont, Fenn, Henty, Knox, Stoddard, Trowbridge. Several popular juvenile authors are not represented in this library. Alcott, Ellis, Henty, Trowbridge .....  Alcott, Alger, Butterworth, Coffin, Coolidge, Henty, Knox, May, Optic, Trowbridge, Wide Awake, St. Nicholas, Harper's Young People. Alcott, Alger, Castlemont, Finley, Molesworth, Optic, and fairy books. Alcott, Castlemont, Coffin, Coolidge, Douglas, Finley, Kellogg, May, Pyle, Trowbridge.  We keep no account..... Abbott, Alcott, Alger, Castlemont, Ellis, Finley, Henty, Molesworth, Optic, "Pausy," Phelps, Stowe, Trowbridge, Vandegriff. Alcott, Alger, Ballantyne, Castlemont, Coolidge, Ellis, Ewing, Finley, Kingston, May, Stowe, Trowbridge, Warner, Whitney. Alger, Castlemont, Ellis, Henty, Optic, Trowbridge, fairy tales; Abbott, Beard, Coffin, also. Alcott, Alger, Butterworth, Castlemont, Coffin, Cooper, Kellogg, May, "Pausy," Stoddard, Towle, Trowbridge, Mark Twain. Alcott, Alger, Ballantyne, Castlemont, Coffin, Ellis, Finley, Henty, Kingston, Knox, Molesworth, Thayer, Trowbridge, Verne. Alcott, Alger, Burnett, Butterworth, Champney, Hale, Henty, Knox, May, Optic, Stephens, Trowbridge. We discard Optic's stories as the volumes wear out. We endeavor to lead them from stories to histories without their knowledge, offering, for instance, one of Coffin's histories when the story for it is not to be had. Alcott, Alger, Butterworth, Coolidge, Ellis, Finley, Henty, Knox, May, Optic.	Personal attention and consultation with parents..... Mild suggestion, avoiding every appearance of trying to find "better books" for them. They are encouraged to consult the librarian and assistants. Public school teachers are helping very much. The children are encouraged to consult the librarian and assistants. Teachers suggest books in reference to work, or good interesting books for home reading. We should have no others in the library. No methods. We find in most cases that children like to choose for themselves. The children are encouraged to consult me, and I offer to go out into the catalog room to help them choose what they want.  We think that teachers have more time than the librarian, who has only high-school boys who charge and discharge books and to the running. No set methods. Whatever help we can render as occasion indicates.  Through the teachers, and the librarian and assistants....  They are invited to consult the librarian..... We have no special rules for the children, but give them all the advice and assistance they will accept.  Our method is simply to guide. We all assist, but as to directing I think they like best to choose.  I have never found it result in good to make too much effort to direct the reading of children; at the same time I am constantly doing all I can in that direction, without their perceiving it, I think with much success. Our books are carefully and judiciously selected. Some parents request me not to give their children sensational reading. A few come to me for suggestion. No special assistant; assistance is freely given by all members of the force.	No. No. No. No. No. No; and the limit is now 14 years. I am making an effort to have it reduced to 12. No. No. No. No. No. No. No; the tables near the juvenile card catalog are usually taken by children.

Stonelham, Stonelham public library; M. H. Boyce.	No.	No methods; they consult the librarian or assistants.
Taunton, public library; E. C. Arnold.	No;	No methods, except that the daggers enable parents or teachers to choose. We invite everybody desiring information to apply at the desk, and we have a large reference room.
Waltham, Waltham public library; Mrs. M. E. Bill.	No.	They are encouraged to consult the librarian and assistants.
Warren, Warren-public library; no signature.	No.	They consult the assistant librarian.
Weymouth, Tuft's library; C. A. Blanchard.	No;	We direct by lists and personal effort. The librarian and assistant are glad to help as much as they can.
Woburn, public library; no signature.	No.	Only the catalog; they are encouraged to consult the librarian and assistants.
Worcester, free public library; Samuel Sweet Green.	No.	The assistants are instructed to look carefully after the reading of persons holding children's cards.
MICHIGAN.		
Bay City, Bay City public library; Annie F. Parsons.	No.	We have a list for each grade above the fourth printed in the course of study of the schools. I am able to give them a great deal of personal attention, and find that most of them are very easily influenced.
Detroit, public library; H. M. Utley.	No.	Special reading list of good books for young people.
Grand Rapids; Lucy Ball.	No.	They are encouraged to consult all, though one assistant who was formerly a teacher has a general oversight of their reading.
Kalamazoo.	No.	Principally through their teachers. We have no special assistant.
MINNESOTA.		
Minneapolis; J. K. Hosmer.	No.	No methods; no special assistant, expect to have one soon.
St. Paul, St. Paul public library; Helen J. McCarne.	No.	They are encouraged to consult the assistants at the delivery desk and bureau of information.
MISSOURI.		
Kansas City, Kansas City public library; Carrie W. Whitney.	No.	The librarian and all the assistants take special interest in the children's reading. The lay in Missouri makes the library a part of the public school system.
St. Louis, St. Louis public library; F. M. Crunden.	No.	Personal advice. Sargent, Hewins, Hardy, and our own graded list.
MONTANA.		
Helena, Helena public library; Frank C. Patten.	No.	Personal help. Lack of time forbids being as helpful as I should like, but we shall make improvement gradually.

## Answers from librarians to questions on page 945—Part II—Continued.

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NEBRASKA.			
Omaha, Jessie Allan.....	Abbott, Alcott, Burnett, Coffin, Dodge, Henty, Knox, Stoddard, Sargent's Reading for the Young, with specially printed book numbers, is placed in all the schools of the city. On our removal to our new building in October, two hours on Saturday morning are to be given by the librarian to the sole use of the children. Books are to be taken to the class room.	Lists of books have been furnished the superintendent of the public schools. A shelf of good books, not necessarily new, is displayed for inspection or choice. A willingness to make selections for the children has influenced the reading more than any of the above.	No.
NEW HAMPSHIRE.			
Concord, public library; D. F. Secomb.	Alcott, Alger, Castlemont, Ellis, Trowbridge.....	Give them a good book, ask them to read it, and report. No special assistant.	No.
Dover, public library; Caroline H. Garland.	Probably Castlemont and Finley, for, alas! we have them both. Kellogg, Trowbridge, Alcott, and Coolidge push them hard. Little Lord Fauntleroy is the one popular book.	Personal effort and work with the teachers. I am about to try boys' clubs. The children are invited to come freely to us all.	No; but the children have a table in the general room and are made welcome at the general tables.
Manchester, Manchester City library; Mrs. M. J. Brucher.	Alcott, Alger, Burnett, Castlemont, Champney, Coolidge, Ellis, Henty, Kellogg, Lillie, Molesworth, "Pansy," Stephens, Trowbridge.	No special methods; no special assistant.....	No.
Nashua, public library; Harriet Cronbie.	Alger, Champney, Coffin, Du Chaillu, Henty, Knox, Margaret Sidney.	No special methods.....	No.
Portsmouth, free public library; E. E. Rich.	Alger, Castlemont, etc.....	Personal advice, and very little time for that.....	No.
NEW JERSEY.			
Newark, Newark public library; E. P. Hill.	Optic, Alger, Henty, Alcott, Trowbridge.....	Persons in charge of bureau of information direct when asked.	No.
Paterson, free public library; G. F. Winchester.	Abbott, Alcott, Alger, Andersen, Burnett, Coolidge, Du Chaillu, Finley, Grimm, Knox, Optic, Trowbridge.	No special assistant; advice in selection of books, and assistance when opportunity offers.	No.
Plainfield, public library; E. L. Adams.	Alcott.....	.....	
NEW YORK.			
Albany, home libraries; Mary S. Cutler.	Alcott, Coolidge, Stoddard.....	Personal work.....	No.
Brooklyn, Pratt Institute; Mary W. Plummer.	Alcott, and all fairy tales. Boys over 14 read Henty largely.	They are obliged to take books from the list we have compiled. At present, my assistant waits on them.	No; but in the building soon to be erected we shall have the children's library and reading room entirely separate, with special attendants and access to all but fiction shelves.
Brooklyn, Union for Christian Work; Fanny Hull.	Alcott, Alger, Coffin, Coolidge, Finley, Henty, Optic, Trowbridge.	No special assistant. They are encouraged to consult the librarian and all the assistants.	No; a separate table.



Buffalo, Buffalo library; J. N. Larned.	Alcott, Aldrich, Alger, Ballantyne, Burnett, Coffin, Coolidge, Mrs. Guster, De Foe, Dodge, Dana, Ewing, Fenn, Hawthorne, Henty, Knox, Lillie, Oprie, Otis, Molesworth, Noble, Shaw, Stanley, Stockton, Verne, Pittenger's Capturing a locomotive, Beart's American boy's handy-book, Grimm's Tales, Lanier's King Arthur, and a steady and voracious demand for everything on electricity. ALGER and Oprie are discouraged. Sargent's guide is kept on the children's shelves; various library juvenile catalogs and guides are among the aids to readers, and typewritten lists mounted on paste-board are hung where they will attract attention.	They are encouraged to consult the librarian and all the assistants.	No; because we cannot afford the necessary attendant.
Gloversville, Glover's ville free library; A. L. Peck.	Boys' books: Trowbridge, Kingston, Ballantyne, Henty, Fenn, Kellogg, Ellis, Fostdick, and Alger. Knox is quite popular with older boys, and Church with boys studying Roman and Greek history or the classics; so also Baldwin. Girls' books: Alcott, Clarke (Sophie May), Mathews, Douglas, Champlin, Sidney, Allen (Hansy), Townsend, Matthews, Dodge, Mulholland and Finley. All children read Lord Fauntleroy and the other of Mrs. Burnett's juveniles. Abbott's American pioneers and Uncle Tom's Indians are very much in demand, and Uncle Tom's cabin is as popular as ever. We also find girls who read Alger, Fostdick, and Ellis. While there are a great many boys who seem to think that the world's greatest writers are Alger, Fostdick, Ellis, and Adams, and are not inclined to read anything else, and while the never-ending Elsie seems to be the only model heroine of so many girls, I have every reason to believe that the children's reading in this place is improving. We stopped buying Alger, Fostdick and Ellis about three years ago, and do not expect to replace them when worn out. Of Adams's (Oprie) books we only have the following: Young America, abroad, Soldier and Sailor series, and The blue and the gray. Alger, Coolidge, Finley, "Fansy," etc. ....	The children's reading I always considered of so great importance as to give it my constant care and attention. I try to become acquainted with the children by frequent visits to the schools. At these visits I invite the children and their teachers to come to the library, and assure them of my readiness to be of use to them in their lessons as well as in the selection of their home reading. A large number of children have their books selected at the library. The children are always welcome at the librarian's office, and they frequently come there for aid and advice.	Not yet. We expect to have one as soon as we move. At present we have in the delivery room a children's table, a sort of punishment for the unruly ones who need supervision.
Newburg, Newburg free library; C. Estabrook.	Alcott, Alger, Bolton, Burnett, Batterworth, Castlemon, Coffin, Cooper, Coolidge, Dodge, Douglas, Grimm, Henty, Knox, Pratt, May, Otis, Stowe, Trowbridge, Verne.	The children feel perfectly free to consult the librarian and all the assistants. The librarian is well known to them. The children recognize him and his assistants as their friends. Printed lists. They consult the librarian and assistants...	We have but one reading room, and readers of all ages use it, without disturbing each other.
New York, New York free circulating library; Ellen M. Coe.	In fiction, Henty is just now taking the lead with boys, supplanting Alger and Castlemore. With girls, Alcott, Burnett, and Coolidge. In history, Coffin. Much popular science is read by children.	Constant supervision of assistants, special bulletins, books recommended in catalog as stated. Assistants refer such questions as they can not answer to the librarian, who holds herself always ready to assist in this most important service.	No; but we expect to have one.

*Answers from librarians to questions on page 945—Part II—Continued.*

	9	10	11
NEW YORK—continued.			
New York; no name of library or signature. New York, Y. W. C. A.; Sarah W. Cattell.	Alcott, Alger, Castlemont, Fern, Finley, Kellogg, Holmes, Lee, Sophie May, Optic, "Pansy," Alcott, Burnett, Coolidge, Finley, Whitney, Wiggin.	Publication of selected lists of the most popular books... Girls between 14 and 16 must either select books from the "juvenile" collection or must have the approval of the librarian or assistant in charge. Our "suggestion list" has been very helpful.	No.
Poughkeepsie, John C. Sickley.	.....	We have lists adapted to different grades sent to the teachers in the schools.	No; only a table.
Troy, Troy Young Men's Association; De Witt Clinton.	Alger, Castlemont, Finley, Henty, Knox, Optic.....	We direct but little. They are not as a rule encouraged to consult the librarian or assistants.	No.
Utica, school district librarians; Elizabeth A. Jacobs.	Abbott, Alcott, Alger, Castlemont, Coolidge, Douglas, Farrar, Fern, Henty, Kellogg, Optic, "Pansy," Trowbridge.	If they do not take books from catalog, we select what we think they should read. They consult the librarian and assistant.	No.
OHIO.			
Cleveland, Cleveland public library; Wm. H. Brett.	Alcott, Burnett, Coolidge, Eggleston, Finley, Henty, Little, Stoddard, Trowbridge.	Personal attention from the assistant who is in charge of the fiction alcove and pays special attention to the children.	No; they have access to the general reading room.
Dayton, public library; no signature.	Alcott, Alger, Castlemont, Coffin, Ellis, Finley, Henty, Little, Matthews, May, Meade, Optic, "Pansy."	Talking to them and selecting for them as we may. We have no special assistant, and they are not particularly encouraged to consult the librarian and assistants.	No.
Springfield, Wander public library; R. C. Woodward.	Alcott, Butterworth, Champney, Coolidge, Douglas, Finley, Knox, Meade, Optic, Stoddard, Trowbridge.	Free access to the shelves under guidance of one or two assistants. They are at liberty to consult the librarian and all the assistants.	Sorry to say one thing that our fine building lacks.
Toledo, public library; Mrs. F. D. Jernain.	Alger, Castlemont, Ellis, Farrar, Henty, Kellogg, Knox, May, Reid, Trowbridge.	Simply suggestion. There is no special assistant. They refer requests to the present attendant.	Not at present. We hope to have.
PENNSYLVANIA.			
Allentown, Carnegie free library; Wm. M. Stevenson.	Alcott, Alger, Finley, Henty, Optic.....	Bulletins. They are encouraged to consult the librarian and assistants.	No.
Germanstown, Friends' free library; William Kite.	.....	We do not interfere except with occasional advice. They have no special assistant, but consult the librarian.	No.
Philadelphia, Apprentices Library Company; C. M. Underhill.	Alcott, Butterworth, Henty, Knox, Trowbridge.....	Helping them in their selections. They are told to ask for help. At present we can do very little because we have no room, but in the not distant future I hope for a special reading room and a special assistant.	No.
Scranton, Scranton public library; Henry J. Carr.	No statistics as yet.....	.....	Not as yet.

Wilkesbarre, Osterhoud free library; Hannah P. James.	Alcott, Coffin, Ellis, Henty, Kellogg, Knox, Perry Stoddard.	No methods excepting the greatest care in selecting the best books for them. Assistance is readily given when asked, but we have no one whose special duty it is to assist them. The school list has been of great help to the children and teachers. I have never been successful in finding children who wished to be advised. They always prefer to choose their own books. I find the teachers are influencing the children, however, and they are learning to care for books other than story-books, by getting interested in the schoolbooks. A number of teachers have told me that the children from the poorest homes care least for stories. They haven't been brought up on fiction, and take readily to facts.	No.
RHODE ISLAND. Newport, Newport public library; no signature.	No statistics kept, but the average reading is of a good character.	We refuse them books that are too old for them. We have no special assistant. Our library has 30,000 volumes, 40,000 circulation, one overworked and underpaid librarian, one cheap boy, and no janitor. We have no time for special reports nor for special work.	No; there is scarcely a time, except during school hours, when there are not from 20 to 60 children at our tables.
Pawtucket, Pawtucket public library; Minerva A. Sanders.	Alcott, Jane Andrews, Barnett, Butterworth, Coolidge, Doane, Dodge, Henty, Knox, Olive Thorne Miller, Scudder, Sidney, Stoddard, Trowbridge.	Book lists; but I get the best results from personal guidance and interest. The children understand that it is their privilege to ask the librarian and assistants for all the necessary help, which is given cheerfully. Chiefly to consult the clerk at the information desk.	No.
Providence, Providence public library; W. E. Foster. Woonsocket, Harris Institute library; Anna Metcalf.	Alger and Optie, I am sorry to say, though it is mostly the new patrons that read nothing else.	Talks in the schools; required reading in the schools; children's catalog. They are helped and advised by all if they will accept.	No.
VERMONT. Burlington, Fletcher free library; Sarah C. Hagar.	Abbott, Alcott, Barnett, Coffin, Coolidge, Henty, Knox, Arcade, Reid, Trowbridge, St. Nicholas, Uncle Tom's cabin. Alger, Castleton, Optie, Thimmes, and the pseudo Mayne Reid are not allowed in the library.	Personal influence of librarian and teachers; no very poor fiction in library. I choose books if I can, and help the children when sent by teachers.	No.
St. Johnsbury, St. Johnsbury Athenaeum; Louise L. Bartlett.	Alcott, Barnett, Coffin, Coolidge, Cooper, Fern, Foley, Henty, Trowbridge. We do not replace or rebid Alger.	Personal suggestion, and attractive books on shelves, etc. They are encouraged to consult the librarian and assistants.	No.
Vergennes, Mary P. Tucker.	Alcott, Barnett, Farrar, Kellogg, Optie, Reid.	Suggestions. Their custom is to ask the librarian personally, and hers to guide their taste from adventures and light reading to a higher taste.	No.
WASHINGTON. Seattle, public library; Mrs. S. K. Harnett.	Alcott, Henty, Kellogg, Optie.	We have no special assistant, but all try to give the best books.	No; we hope to have special arrangements for children in the new building.
WISCONSIN. Milwaukee, Milwaukee public library; Theresa H. West.	Alcott, Burnett, Henty, Kingston, Stoddard.	No special assistant yet; we hope for that in the new building. The best work is done through the teachers. It is rather hopeless to attempt to guide the reading of children individually at the library, where one can not know either the tastes or the character of the particular child. One of the limitations of large city libraries, to my mind.	No; no possible room.



## REFERENCE BOOKS.

By ERNEST CUSHING RICHARDSON, Librarian Princeton College.

The "reference book" in current library use has three recognized meanings:

1 Reference book proper, to be consulted for definite points of information (rather than read through), and arranged with explicit reference to ease in finding specific facts.

2 Books not allowed to circulate, but kept for "reference only."

3 Books accessible to the public.

These definitions are historically related in the fact that the reference book proper, on the principles of frequency and urgency of use, and specially method of use, needs to be restrained from circulation; and, as the most prominent class of restrained books, gives name to all books which do not circulate, including those restrained on account of special value, and even other varieties of kept books. Again, from method of use, this class of books is most troublesome both to user and to librarian, if each one must be signed for and given out, so that it is the first class to compel placing books on shelves accessible to the public, and thus gives name to a class which may include many works not strictly of reference.

## POINTS OF AGREEMENT.

1 A good collection of reference books is fundamental (*a*) to the proper accumulation of a library and (*b*) to its effective use.

*a* The first step in founding a library is to get a suitable collection of bibliographic reference books—bibliographies, publishers' and library catalogs, etc. This is the way Dr. Cogswell proceeded in building the Astor library, and what Dr. Poole has done in the Newberry. It is beyond dispute the only sensible and economical way to gather a library, for such works guide to the best books on a subject, the best editions, and the best prices. Moreover they often furnish in themselves indirectly the clue to what general works will be most useful; e. g., the "periodicals indexed in Poole" have been gathered often simply because being indexed there they are far more useful to the public than many others of equal intrinsic value. This principle is capable of a much more systematic application than is generally made.

*b* In all libraries, specially those of research (including all libraries at all touched with the modern library idea), the most important of all books, except the small number of literary masterpieces, are those which afford:

1, Primary information on every subject; 2, references to where further information can be found. An extremely well-collected library of general works—history, biography, etc.—lacking good reference books may, quite likely, be far less useful than a rather miscellaneous one with good cyclopedias, dictionaries, indexes, etc. Stress is laid on this

circumstance since, from the fact that reference books are generally relatively dear per volume, the policy in medium-sized libraries is too generally to neglect these for "much called-for" travel and fiction.

2 Wherever practicable, means should be taken to train readers to use reference books. This is done (*a*) by individual assistance to readers (see chapter by Foster); (*b*) by lectures, as by Dr. Poole (*L. j.* 8: 51-52) and by various others, specially in college libraries; (*c*) by printed guides to the use of books (Green, Library aids, handbooks of various libraries, etc.); (*d*) by devices to induce practical use of the books (e. g., Library questions and answers, *L. j.* 3: 126, 159).

3 The following classes are reference books under all definitions: General bibliographies, general cyclopedias, general dictionaries of words, persons, places, or things, atlases, and general indexes.

4 The most used reference books, with all unique and excessively valuable books, should be restricted in circulation or restrained altogether.

The reasons underlying the restriction of books are (*a*) that they will be needed by others; (*b*) that they will be in danger of receiving injury; (*c*) that they will be in danger of doing injury.

5 At least a small selection of the best reference books should be accessible to the public. These have come to be known as the reference department, and are in general usage, *par excellence*, reference books.

6 That more and better reference books are needed, and that librarians have responsibilities in their making.

This is recognized in the special committee of the A. L. A. on cooperation (see chapter by Fletcher on Indexes). The systematic effort of the association has hitherto been chiefly directed to cooperation of many members in single works (Poole's Index, A. L. A. indexes). This field is by no means filled, and one of the most practical objects for early future work is an index to biography (see Ford, *L. j.* 17: 85-86) on a method combining that of Poole's Index with that of Phillips' Dictionary of Biographical Reference. An even larger field is to be found in cooperation by division of labor by which each librarian takes some larger or smaller specialty, according to his tools and energy, and makes this his lifelong care. This has been recognized in our A. L. A. system of annual reporters and particularly in this subdivided handbook. To carry it out each cooperator should consider his subject, or some subdivision of it, a perpetual specialty, should produce a monograph and keep it up to date, printing as opportunity occurs. As Mr. Cutter is a specialist on rules for cataloging and various other things, Miss Sargent on books for the young, others should take other subjects and be perpetually responsible for them.

## POINTS STILL UNSETTLED.

## 1 Shall the loan of reference books be absolutely forbidden?

Some librarians are forbidden by terms of gift and others by their own law to lend any book or any reference book out of the building. The majority, however, who are free from the bondage of the law, though under the law of righteousness make exceptions to the rule, which fulfill its spirit; e. g., in a library which closes at dark reference books may be lent one night, or less used reference books may be lent on condition of immediate return if wanted by someone else. In some libraries periodicals are regarded as reference books, and are not lent at all, or lent for one, two, or three days. The sensible principle seems to be that, just as frequently used books which are to be read through are restricted in time to the shortest time (say seven days) in which they can be conveniently read, so reference books should be restricted to seven, three, one, or a fraction, and lengthened for special circumstances.

On loan of reference books, see Madan, Bodleian lending, Oxf., 1888; *L. j.* 6: 226 (1881).

## 2 What are the exact limits of restricted books of reference?

Valuable books and immoral books are evidently not strictly "reference books," and the term "kept books," sometimes applied to one or both of these, might be a better general term for restricted books, valuable books, "Facetiæ," etc.

Books like periodicals, restricted to one to three days, are more nearly reference books, but are not "for reference only," nor yet kept books; therefore the term "restricted books" might be used for all books lent for less than regular time or on special conditions of deposit, guarantee, etc.

Temporary reference books, or books temporarily withdrawn from circulation for some special reason (e. g., college, school, and literary societies' essays and debates), are strictly reference books, but are sometimes called "reserved books."

In libraries with large, accessible reference departments, text-books, histories, etc., are included, which are not strictly or generally in other libraries regarded as reference books, and on the other hand some libraries circulate little-called-for books which (e. g., *Savage's Dictionary of Genealogy*, *Burke's Peerage*) in others are much in demand and regarded as strictly reference books.

## 3 Whether books generally considered immoral in tendency should be (a) circulated freely, (b) restricted to special application, (c) excluded entirely.

The chief discussion under this relates to works which have an established place in literary history, and on this issue there is substantial agreement that there is at least a minimum number which should be restricted, but not excluded. Similarly on the question of erotic literature, librarians agree in restriction, with a strong vote for substantial exclusion. (See chapter on Fiction by Miss Coe.)



4 How far books shall be accessible to the public (Question of reference department—access to shelves).

The question is quite apart from one of circulating or not circulating. The largest "reference libraries" (e. g., the British Museum) have "Reference departments," or books placed at the free disposition of readers—a wheel within a wheel. Again, the books exposed (e. g., once more, the British Museum) are seldom confined to technical reference books. They are rather a "miniature of the whole library," the cream (from the worker's standpoint) of the whole collection, having representatives from every class. These are reference books in the most general usage of the present day. The general question of the reference department is therefore a much broader one than that of the technical, unquestioned reference books which it may contain, and involves the whole problem of access to the shelves.

The reference department, as now constituted, is a compromise between the ideal demand of readers for access to all the books and the recent total denial of the right of access, which, beginning in a laudable spirit of exact organization, grew into a spirit of red tape.

The demand for a more general access to the shelves is being more and more recognized as a just one. The practical advantage to the student (*L. j.* 2: 62; 12: 184; 13: 180; 15: 20-21) or even the general reader (*L. j.* 15: C33-37) of access to and handling his books is generally acknowledged, though some librarians maintain the rather futile contention that readers are better and more quickly served by catalog and attendant than by aimless (?) wandering among the books. The fact of advantage settled, it is with the modern librarian merely a question of "none, or some, or all." The "none" is now eliminated by universal consent, and the "all" must be also dropped by libraries which have valuable books, leaving only the question of how many and how—degree and method—questions of casuistry.

The range of this question extends from a small collection of reference books to all but a few extra valuable or "inexpedient" books, and every phase has its counterpart in actual usage. Some libraries give access to none, others to all but valuables. Some give access to substantially all but fiction, others to none but fiction, and still make various degrees between (e. g., Patents and Fine arts).

The difficulties in free access to shelves are:

- 1 Danger of loss or mutilation of books.
- 2 Danger of confusion through misplacement of books.

Something of both must be counted on, and this constitutes a difficulty great enough to make access of everybody to everything impossible in the largest libraries, though practicable in many small ones. This impracticability of a very desirable thing has led to compromises and substitutes, the most universal of which is the reference department having as large a selection as can be managed of the best working books, or even the best books for reading (a "library of best books,"

see Larned, *L. j.* 14: 127), and having besides this fixed collection various features of a more or less changing character, such as collections of books on special topics placed in reference department when these subjects are specially inquired after, the "Seminary library," where special classes of books are gathered for special classes of students, and now quite commonly, the "Latest accessions," which, placed where they can be looked over, satisfy the most clamorous demand of the general reader.

Another compromise or substitute is admitting certain classes of users who will receive the greatest probable advantage and do the least probable harm. Sometimes this is done only when the reader is accompanied by a library attendant, but often it is allowed with simple shelf-permit. This is a common practice in college libraries, where professors often have free access and can grant permits to students.

The result of endless discussion on the whole subject is that there is an increased number of libraries giving access to most or some classes, a great increase in select reference departments and increase of facilities for alcove use, and a genuine disposition to grant the broadest practicable access.

Following are the more interesting references bearing on the question:

GENERAL. *L. j.* \* 8: 241 (Foster); 13: 35 (Cornell); \* 15: 100; \* 103, 133-34; \* 15: 197-98, 229-31, 296 (Symposium on access); \* 16: 268-69 (Higginson); \* 16: 297-300 (N. Y. Lib. Club); 16: C62.

DISCUSSIONS. *L. j.* 2: 275-78 (London); 12: 44; \* 13: 309 (Catskills); 16: 108 (San Francisco); 17: 69-70 (Lakewood); 18: 124 (Minn. L. A.).

SPECIAL CLASSES. 18: 189 (English); 5: 180 (students); 14: 127-28 (class-room); 115: 142-43 (seminary); 17: 86 (college); \*\* 18: 116 (college).

INDIVIDUAL LIBRARIES. *L. j.* 12: 229-30 (Buffalo); 15: 137; 16: 34; 17: 445 (Cleveland); 16: 175; 18: 160 (Minneapolis); 15: 20-1 (N. Y. Astor); 12: 397 (Pawtucket); 14: 484 (Phil. mercantile); 3: 71 (San Francisco mercantile); 10: 157 (Odd Fellows, San F.); 4: 353; 7: 141, 144 (Worcester).

5: 210 (Brown); 17: 50-1 (Chicago); 17: 59, and *Lib. Notes* 2: 216 (Columbia); \*\* 18: 181 (Cornell); 12: 189 (Harvard); 2: 53-7 (Princeton).

12: 519 (Birmingham, Eng.); 6: 52; 12: 522-3 (Cambridge, Eng.); 18: 184 (Hamilton, Ont.); 12: 202 (Melbourne, Austral.).

Besides the above references, various allusions will be found in the Library journal, direct or implied, in accounts of "Reference libraries" such as the British Museum and Bodleian, the Astor, Newberry, Watkinson, etc. Moreover, the question is a live one, and information is to be expected in current numbers of periodicals, and it is treated in other papers in this volume.

5 Finally librarians are not agreed on methods of administration of reference books. This, however, is one of the cases where there is lack of agreement on account of lack of comparison.

The chief points are: How to protect from loss and confusion, how to keep accurately located, and how to preserve statistics.

A frequent method of numbering reference books is simply to prefix R or Ref. to the regular number. To protect from loss or confusion the fundamental means are frequent examination with shelf list, conspicuous numbers on outside of books, and the use of dummies.

The best discussion of methods for reference is Austin, *L. j.* 18: 181-83 (1893); see also (method of recording use) *L. j.* 15: 221 (1890), and (arrangement) *L. j.* 5: 180 (1880).

**Bibliography of reference books.**—Cutter's Rules (Wash., 1891), p. 128, give a sufficient list of best reference books for cataloging. Of reference books for public use the chief of all lists is the books of reference in the reading room of the British Museum (Lond., ed. 1, 1871, ed. 3, 1889).

This does not answer the same practical purpose as Cutter's, on account of the great number and variety of books included, but in the latest edition the lists, arranged like Dr. Spofford's list in the 1876 report under various subjects, make an exceedingly useful and on the whole the best guide to reference books for a large library. Somewhat nearer to average need is the list in Wheatley, *How to form a library* (1887), pp. 91-129 and 141-173.

To supplement these lists for the most practical uses consult the A. L. A. report on aids and guides; Green, 1882; Foster, 1883; Crunden, 1886; Lane, 1887; Lane, 1889; Beer, 1890; also Green's *Library aids*, Lane's *Indexes to best and recent reference lists in the Harvard University Bibliographical contributions* Nos. 17 and 29, and Carr's *Index to recent lists*, *L. j.* 8: 27-32 (1883). These with Whitney's *List of bibliographies in the Boston public library* are the best helps for the average library, but the larger libraries will find the bibliographies of bibliographies by Petzholdt and Vallée primary. To keep lists up to date see bibliographic departments of the *Library journal* and the *Centralblatt*.

For select lists Winsor's reference books in English (*L. j.* 1: 247-49) is a model of practical method and just discrimination, now partly but not wholly out of date. Miss Hewins (*L. j.* 11: 305-8 *passim*) indicates reference books for the smallest libraries. Later lists of considerable help and varying critical value are found in works of Sonnenschein (*Best books*), Sargent (*Guide book to books*), and Acland. These represent libraries of say 50,000, 15,000, and 2,000 vols. They all give hints of prices. The standard lists for a small library at the present day is of course the catalog of the A. L. A. library.

On the whole, decidedly the best recent apparatus regarding reference books is found in the latest edition of Chambers's *Encyclopedia* under "Encyclopedias" where there is a list given of the best ones general and special, and where under the various articles there are bibliographic references.

It may be said in general that as the first and most general "reference book" to be chosen for a library is a cyclopedia, so in all the suc-



ceeding generations of such works, that one will always be "best" for library purposes which fulfills the two functions of a reference book furnishing both a condensed summary of every subject, and references to the best extended treatises on each.

### ASSISTANCE TO READERS.

By W. E. FOSTER, Providence (R. I.) Public Librarian.

The experience of libraries generally shows that a comprehensive policy of assistance to readers must take into account the following conditions:

- 1 Discrimination in shaping the collection.
- 2 Marshaling the books on the shelves by an effective system of classification.
- 3 Utilizing the different forms of cataloging helps.
- 4 Planning the library building with specific regard to facilitating assistance.
- 5 Supplementing all the above by personal assistance.

1 *Discrimination in shaping the collection.*—Library officers are generally agreed that strength does not lie in mere numbers; that it is as true of books as of soldiers that, for truly effective work, 1,000 carefully picked are worth 2,000 assembled at random. All but a very few (such as the Library of Congress, which receives two copies of every book copyrighted) would omit also the distinctly bad and the distinctly worthless books. So far as concerns current publications all agree as to the desirability of some guide to their selection, which shall be sufficiently comprehensive, trustworthy, and regular in its appearance, but they are not yet so nearly agreed as to its practicability. That particular variety, however, advocated by Mr. Hes<sup>1</sup> perhaps comes nearest to meeting with general acceptance, and is indeed, already tentatively in operation, lists on electricity and other subjects, prepared by competent specialists, having been put into print.

There is also general agreement as to the necessity of discarding, from time to time, useless parts of a collection already gathered, but decided disagreement as to the extent of it. The extreme position in the direction of "winnowing" is represented by Mr. Charles Francis Adams.<sup>2</sup> Difficulties in the way of maintaining an arbitrarily "fixed number" of volumes are pointed out editorially in the *Library Journal* (18: 108), the objections to making even the smaller libraries less than complete in such specialties as local town history or local industries are emphasized by Mr. Winsor,<sup>3</sup> and the inherent uncertainty attending any forecast of the future needs of a constituency are suggested by

<sup>1</sup>In his paper, "The evaluation of literature," *A. L. A. Proc.*, 1892, pp. 18-22. See also his Chicago paper, *L. j.* (Jl., 1893), 18: 217-18.

<sup>2</sup>In 22d ann. rept. Thomas Crane Public Library, Quincy, Mass., 1894; also in his address of June 12, 1893, cited below.

<sup>3</sup>"The future of local libraries," *Atlantic*, June, 1893, 71: 815-18.

Colonel Higginson.<sup>1</sup> Mr. Adams has himself done much to facilitate a more general agreement with the principle of winnowing which he advocates by linking with it in later discussions<sup>2</sup> the principle of differentiation in libraries, with which, indeed, it is inseparably connected.<sup>3</sup> The following may perhaps be safely accepted as harmonizing different views: Not only must single individuals be taken into account in deciding on the serviceableness of a given book or line of publication in any library, but groups of individuals, such as classes, clubs, societies, etc., and, back of that, whole interests in the community, such as the schools,<sup>4</sup> the press,<sup>5</sup> the departments of the municipal government (as, for instance, the city engineer's office),<sup>6</sup> and, emphatically, the local industries.<sup>7</sup> Where a library is the only one existing in the place, its constant aim should be "to fit the community like a glove." If, however, there are several, as in most large cities, a common understanding as to each other's specialties or limitations will go far toward assuring that in some one<sup>8</sup> of the libraries, at least, each reader or student will find approximately all that he needs on his particular subject. The "unit of constituency" is thus not so limited a conception as that of a single library, but that of the town or city as a whole. It is possible, moreover, to preserve a general "library equilibrium" by transfers of whole classes of publications, e. g., pamphlets or government publications, from a library less able or willing to care for them to one which is more so.<sup>9</sup> Discarding should be employed emphatically in the case of publications which are liable to prove misleading or antiquated, and particularly in natural and applied science. It is of the first importance that an artisan in search of the best work for his purpose in electricity, where a treatise goes out of date in ten years, should not find his way blocked up with the publications of two decades ago.<sup>10</sup> Yet

<sup>1</sup>In address before Mass. Library Club, June 12, 1893. See *L. j.* (Ag., 1893), 18: 294.

<sup>2</sup>In his address of June 12, 1893, before the Mass. Library Club, which he entitles "The differentiation of libraries, and the proper field of local libraries."

<sup>3</sup>For other discussion of the above subject see the *Nation*, March 23, 1892, 56: 210-11; *L. j.* (Ap., 1893), 18: 118-19; also S. S. Green's paper at Chicago conference, 1893, see p. 698, and discussion by Messrs. Poole, Dewey, Crunden, and others, Chicago proceedings, pp. 18-22.

<sup>4</sup>Miss C. M. Hewins, *L. j.* (Jl. 1893), 18: 251-53.

<sup>5</sup>There are few public libraries in large cities where constant and heavy drafts on their resources by members of the press are not most willingly responded to.

<sup>6</sup>Instances of the kind referred to may be found in the annual reports of nearly every large library.

<sup>7</sup>Testimony such as "the assurance, verbally or by letter, that the resources placed at the disposal of those in charge of these industries have proved unexpectedly serviceable, and are sure to be heard from in the shape of better work" (Providence Public Library, 14th an. rept., 1891, p. 13), is not uncommon in this connection.

<sup>8</sup>See discussion of this point in *Prov. Pub. Library*, 13th an. rept., 1890, p. 6.

<sup>9</sup>See S. S. Green's paper, *L. j.* (Jl., 1893), 18: 220, where C. A. Cutter's suggestion is also quoted.

<sup>10</sup>In any case, dates, not of imprints but of actual first appearance (copyright, preface, etc.), inserted in the entry, should serve to warn off the reader or student, or the reverse.



even these antiquated volumes may not be valueless, always and everywhere, if the cooperative principle be kept in view and the "unit of constituency" be expanded beyond the limits of a single municipality. There is, for example, one library<sup>1</sup> in the country engaged in scientifically collecting antiquated text-books as part of the equipment needed for a serious study of pedagogy. "Library equilibrium" is subserved, not merely by permanent "transfers," but by temporary loans, whether from larger libraries to those of medium size, or from those in turn to the smaller ones, particularly for the accommodation of individual scholars, where the principle of "the library's comity toward literature" requires it. There may even be, as proposed in connection with some of the State library commissions,<sup>2</sup> a system of transfers from a central bureau to a number of libraries in succession. The ideal condition, in regard to adequately meeting the needs of a reader—whether the reader be an accomplished scholar of many years' standing, or a beginner in the use of books—will be attained when a system as elastic as the waves of the ocean, which respond absolutely to all the variations and unevennesses of the bed of the sea, shall supply, in every part of the country, just what is needed and just when it is wanted.

2 *Marshaling the books on the shelves by an effective system of classification.*—Libraries substantially agree as to the necessity for some system of classification, for no one who has searched for a given publication in a secondhand book dealer's unarranged mass of books and papers, and has afterwards used a library where an obvious and natural order is the means of leading easily to the book wanted, needs to be convinced of the utility of this feature of assistance to readers. As to specific systems of classification, there is the widest disagreement;<sup>3</sup> yet even here few will question that it is of less consequence which one, than that some one of the different systems be faithfully followed; since it is but a means to an end, and not an end in itself. The sharpest line of cleavage is perhaps along the question of "close or coarse classification."<sup>4</sup> The experience of an increasing number of small libraries, however, shows that, even for their purposes, a somewhat closely divided system offers many advantages, provided they are left free to adapt it to their conditions.

3 *Utilizing the different forms of cataloging helps.*—Whether or not the reader has direct access to the shelves, it is easy to see of how real

<sup>1</sup>The library of the American Antiquarian Society, Worcester, Mass.

<sup>2</sup>See Mr. Winsor's article, *Atlantic*, June, 1893, 71: 815-18; also provision of New York State Library for "traveling libraries," *L. j.* (D. 1892), 17: 487-88. A very far-reaching suggestion also is that of Mr. S. S. Green in regard to the function of a State library commission, in providing reference books and the necessary equipment for answering inquiries, in the case of the smaller libraries. [*L. j.* (N. 1894), 19: 382.]

<sup>3</sup>The literature of classification schemes is well-nigh endless. See p. 861, and also in abstract, *L. j.* (Jl. 1893), 18: 240-42.

<sup>4</sup>See *L. j.* 11: 209-12, 350, 353.



assistance to him is the ability to say: "On this shelf you will find, approximately, all that the library contains on electricity," or even on the division "electric transportation," or even on the subdivision "trolley electric roads." Yet it is essential that the inherent limitations of that form of assistance should be clearly appreciated. Of only a part of the books or subjects represented in a library is the principle of "one subject to a book"<sup>1</sup> true. The fact that, for instance, volumes of collected essays defy this assignment is one of the reasons why the larger libraries many years ago resorted to analytic cataloging, for it is possible, fortunately, to say of a catalog what can not be said of a shelf: "On this page, or in this drawer, you will find all that the library contains on your subject;" and it explains, also, the wide serviceableness which printed catalogs, like that of the Boston Athenæum, have had in other libraries than those for which they were made. The agreement among libraries as to the necessity of cooperation to render such facilities universal could not have received more emphatic testimony than in the successful achievement of Poole's Index and the "A. L. A." index to general literature, the one transforming files of periodical literature from dead lumber to the livest of circulating material, and the other performing the same service for volumes of essays, etc. Disagreement in regard to the lengths to which this principle of cooperative cataloging may be carried is not at all over the question whether it is desirable, but whether it is practicable; but the successful execution of the catalog of the "A. L. A. library," at the World's Columbian Exposition, has placed this matter in a clearer light.

The future of the "subject catalog" of an individual library is at present attended with some uncertainty. There can be little question that when it shall be no longer necessary for each separate library, with its limited funds, to do in a thousand cities and towns what can be done at a central point, once for all,<sup>2</sup> the better endowed libraries will find themselves at liberty to spend their funds in making their development more symmetrical and possibly in supplying elaborate subject catalogs of the "special collections." The relative superiority of the bibliography and the subject catalog has been earnestly discussed;<sup>3</sup> but serious students can not afford to dispense with either of them.<sup>4</sup> An increasing number of libraries during the past fifteen years have made wide use of "reference lists," and perhaps no other form of library help surpasses this in flexibility. "The bibliography aims at completeness for the sake of completeness," while "the reference list is as complete as it serves its purpose to be."<sup>5</sup> The purpose of the latter is particular in

<sup>1</sup>A. L. A. Proc., 1890, p. 6.

<sup>2</sup>See *L. j.* (Ag. 1893) 18: 278.

<sup>3</sup>See articles of C: H. Hull, *L. j.* 15: 167-71; and C: A. Cutter, *L. j.* 15: 163-64, 196.

<sup>4</sup>W: E. Foster, in A. L. A. Proc., 1890, p. 7.

<sup>5</sup>*L. j.* 4: 86.

the extreme—namely to extend specific assistance on a subject of interest at a specific time, and, in many cases, to a specific student. It is thus free from the trammels of the bibliography, which would compel it to include editions or treatises of a recognized antiquated or misleading nature; and also from those of the subject catalog, which would compel it to omit the one best book on the subject if the library should not happen to own it. In the latter case, the student can go, with the reference list in his hands, to some other library which has the book; or the library itself may promptly order the book. An advantage of the card-catalog principle, as compared with the printed or stereotyped catalog, which has repeatedly been emphasized, is that while the latter crystallizes a condition of things which once existed but exists no longer, the former responds unerringly to what exists at the time; and this advantage is eminently true of the reference list. Timeliness<sup>1</sup> in meeting a want at the time when it arises,<sup>2</sup> lies at the foundation of this method of assistance. There is here also a deeper significance as regards what may be called the adequate cataloging of the library. In more than one sense no library can be cataloged "once for all," but if, as occasion arises, and from the hundreds of different points of view which are continually presenting themselves, its resources in these particular directions be enumerated, and if, moreover, these successive and minute reference lists be filed and indexed, something will have been done,<sup>3</sup> analogous to the "placer" work to which the miner resorts, to exhaust, if possible, all the ways in which the particle of gold might succeed in escaping his search. In this respect a wider employment of the reference list principle on the part of the smaller libraries might do much to illustrate Mr. Adams's suggestion<sup>4</sup> that a collection of a limited number of books, kept down by a weeding process, and repeatedly and minutely recataloged, is worth more to its readers than one of twice the number of volumes with no sifting processes, and with infrequent cataloging or none at all. The reference list, however, exists in many different forms. In its daily or occasional form, it is usually prepared in manuscript, or by some copying process; and, if the latter, can reach a wide circle of users. In its weekly form it is frequently met with—in addition to the instances just named—in the columns of some newspaper, and thus reaches the eyes of thousands of readers. In its monthly or quarterly form it is found either as a separately printed sheet or as forming a distinctive feature of the library's official "Bulletin." To the manuscript instances above referred to, usually in the form of written sheets, may be added the particular variety wherein catalog cards are substituted for sheets; and in more than one quarter

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<sup>1</sup>W: E. Foster's "Libraries and readers" (1883), pp. 50-51.

<sup>2</sup>See Prov. Pub. Library, 15th an. rept., 1892, p. 9; also G. Iles's "Public libraries of to-day," N. Y. Tribune, Oct. 9, 1892.

<sup>3</sup>Other possibilities are suggested in W: E. Foster's paper at St. Louis conference, 1890 (Proc., p. 239).

<sup>4</sup>See *L. j.* (Ap. 1893), 18: 119.



the very serviceable suggestion has been made of applying the Rudolph Continuous Indexer to the purposes of reference lists, as well as to those of the general catalog.

There are few principles so deserving of constant remembrance within the walls of a library as that emphasized in an address at a recent library dedication, namely, that "Books are made to be read."<sup>1</sup> Acting on this principle, it is the practice in many libraries to study all possible opportunities of getting the books down from the shelves and into the hands of students and readers. Consequently the answer to a reader inquiring "How many books may I have for use in the reference room at any one time?" will necessarily be: "As many as you need—a hundred if necessary."<sup>2</sup> Consequently also a close attention to subjects of current interest will reveal the fact that nearly every book in a collection of ordinary size will have had its special interest for some reader, at some time, in the course of five years. Consequently also the principle that for every book added to the library there exists a reader needing to use the book, if he can only be apprised of it, will develop the use of methods<sup>3</sup> to bring the book and the reader into connection. There is no surer way of cutting down to a minimum percentage the "books never called for,"<sup>4</sup> than by the methods above mentioned.

Divergence of opinion exists in reference to the not easily settled question as to the balance of advantage between the published catalog of a single library, with its series of printed supplements on the one hand and the card catalog on the other.<sup>5</sup> The printed catalog has the advantages of legibility and convenience of handling, and the disadvantage of an ever-increasing multiplicity of alphabets unless the expensive "consolidated catalog" shall be resorted to. The card catalog, in its usual form, has the disadvantage of inconvenience<sup>6</sup> of handling, and the great advantage in the case of a dictionary catalog of a single alphabet.<sup>7</sup>

In a large percentage of libraries the "shelf list" and the "class list" are identical, thus supplying a manuscript subject catalog which, if allowed to be consulted by the public as well as the staff, and supple-

<sup>1</sup>E. E. Hale, at dedication of St. Louis Public Library, 1893.

<sup>2</sup>A. L. A. Proc., 1890, p. 7.

<sup>3</sup>Some of these methods are indicated in Prov. Pub. Library, 15th an. rept., p. 3.

<sup>4</sup>Government publications are among the material which the Quincy policy would suggest discarding, yet these in some public libraries are among the "livest" of material in active use. The tendency to "turn the general reader, in many instances, into the special student," is to complicate the problem of winnowing.—*L. j.* (Ag. 1893), 18: 294.

<sup>5</sup>See P. L. Ford's Chicago paper, *L. j.* (Jl. 1893), 18: 219.

<sup>6</sup>It is true that the substitution of the "tray" variety of card catalog for the common "drawer" type will largely tend to diminish this inconvenience.

<sup>7</sup>Early comment on the Rudolph Continuous Indexer is to be found in *Lib. Jour.*, 16: 313; 17: 25, 371-72; 18: 120-21. Later and more decided recognition of its capabilities is in *L. j.* (Ag. 1893), 18: 277-78; *Nation*, Ag. 31, 1893, 57: 150.



mented with a comprehensive subject index, comprises one more link in the chain of assistance to readers. This "class list" being a precise reproduction of the order in which the books stand on the shelves, it is subject to the same advantages and disadvantages which have already been shown to attach to shelf arrangement, as a help to readers; with this difference, however, that the class list shows the titles of books which are out, as well as those which are in. Here also, as in the case of the shelves, it does not follow, from the limitations pointed out above, that as little classification as possible is going to help us. If you are on a train running from New York to Chicago, and you wish to communicate for a moment with your friend, and find that he is not in the same car with you, it is something to be thankful for, is it not, if he is in another car of the same train—and that a vestibule train—rather than on another train on a different railroad?

4 *Planning the library building with specific regard to facilitating assistance.*—The library architecture of the past ten years is perhaps in no one particular better worth studying than in the effective adaptation of well-chosen means to specific ends. Doubtless some of the most effective library work may have been performed in buildings illustrating every conceivable fault of library arrangement; and yet, if the opportunities for usefulness which have been lost, even under this intelligent effort, be enumerated, they would show how enormously the maximum of usefulness even of such a library could have been increased. A few principles which experience has shown to be fundamental and about which there is general agreement may be named. (1) Determining the position of the natural centers or axes, in the relation of the different parts to each other, and thence radiating in such a way as to secure the least expenditure of time, space, and effort, as well as the nearest approach to straight lines of access. (2) Foresight in making such a disposition of the parts at the outset as will not be negatived, but rather emphasized, in all subsequent extensions which may be made necessary. (3) Combining, so far as possible, compactness in the storage of books, with the most generous provision for the specific needs of individual students and readers.<sup>1</sup> In all these details, and particularly the provision for the "least expenditure" of time, space, and effort, it would be easy to misconceive of the matter as one affecting the convenience and efforts of the library attendant alone. It must not be forgotten, however, that, even where the reader or student does not personally visit the shelves, he does so, vicariously, in the person of the library attendant.<sup>2</sup> To a fruit merchant in New York a shipment of peaches which consumes five days when one day might have served is of vital consequence to him, even if he does not take the railroad journey himself; and it is no less vital to the reader or student that an unnecessary amount of space, interposed between the attendant's start-

<sup>1</sup> See C. C. Soulé's paper, *L. j.* 17: 124-25; also discussion of the subject by Messrs. Ford and Carr, at Chicago, *L. j.* (July, 1893), 18: 219, 225.

<sup>2</sup> A. L. A. Proc., 1890, p. 7

ing point and the book required by the reader, shall not multiply to an annoying extent the time which the reader must wait before obtaining his book. The question of access to the shelves<sup>1</sup> at all on the part of the reader is one which has two sides, even in this matter of time-saving. In a very small library it is probably true of the greater number of the books charged to readers that they will have been taken from the shelves by the readers themselves and brought by them to the desk to be charged. Here the balance of advantage would be decidedly in favor of access to shelves, on the basis of time saving. These conditions would be almost wholly reversed in a large library. In its stack, if of the conventional type, with its labyrinthine passages, the book borrowers would be not only bewildered, but in each other's way; while the impossibility of supervision, resulting in large loss of books and in very certain displacement of them, would inevitably waste the reader's time and convenience. The conventional stack construction is not the only one available. Few principles in library construction seem likely to prove so fruitful as those associated with the name of the late Dr. W: F: Poole, namely, the housing of each great class in a separate room, with its own attendants, and supplied with all the apparatus of a great study room or laboratory. The fact that Dr. Poole's application of his own principles,<sup>2</sup> in the Newberry Library at Chicago,<sup>3</sup> is on a scale far beyond the means of the average library, does not in any way impair the general soundness of these principles, nor the duty of each library to avail itself of their benefits, so far as its own conditions will admit. This is, in fact, one of those instances where very much more than "half a loaf" can be secured. In an increasing number of libraries the following principles are now recognized:<sup>4</sup>

(1) A sharp distinction between the circulating department and the reference department, thus admitting of placing the latter (dictionaries, cyclopedias, etc.) on open book shelves in the reference room, where they are constantly accessible to all readers without the necessity for applying to an attendant.

(2) Providing an open bookcase in the delivery room, for the current additions of a specified number of weeks back (eight, ten, or twelve). These books may be there handled and examined, and, when desired, charged to the reader, for home use. A reader who should have closely followed up his opportunities in connection with this open bookcase for a year in succession, would have practically had "access to the shelves," so far as the additions of that year are concerned.

<sup>1</sup>A subject whose voluminous literature may be traced by the index in all the recent volumes of the *Library Journal*. But see particularly the following: 15: 197-98, 229-31; 16: 268-69; A. L. A. Proc., 1890, p. 33-37; Chic. Proc., July, 1893, p. 217, 219, 231.

<sup>2</sup>Elaborated in his "Construction of library buildings," 1881; and his "Remarks on library construction," 1883; also in *Lib. Jour.*, *passim*.

<sup>3</sup>Explained by Dr. Poole, with plan, in 1890, Proc., pp. 107-11.

<sup>4</sup>See also *Prov. Pub. Library*, 15th an. rept., 1892, p. 6.



(3) Selection of one or more of the classes usually stored in the stack, to be shelved in a room by themselves; an application of the Newberry library plan, with its tables, desks, and other facilities, not to the whole library, but to a fragment of it. In some libraries the bound volumes of periodicals are so treated, in close proximity to the reading room for current periodicals; in others the industrial works in close relations with the patent room, etc.

(4) Provision of rooms in portions of the building adjacent to the stack to be used as special "study rooms," "class rooms," "dictating rooms," etc., in which the needs of special students, or classes, or university extension centers,<sup>1</sup> or study clubs, or other studious individuals or groups may be specifically met.

(5) The provision of other "study rooms" or "study tables," within the walls of the stack itself, for the use of any serious students who may with confidence be trusted there.

(6) The system of "permits to enter the stack," for an even wider section of the public, which has been developed under very interesting conditions at Cleveland<sup>2</sup> and Minneapolis.<sup>3</sup> In some communities the local conditions will admit of going further than in others in the direction indicated, but there are few which can not avail themselves to some extent of the manifest advantage thus rendered possible. Indeed, the planning of library interiors for some time to come is likely to throw additional light on the capabilities of library architecture in facilitating assistance to readers.

5 *The personal element.*—The library may be equipped with a collection of books most skillfully chosen and sifted; the books may be marshaled on the shelves in an arrangement which most perfectly facilitates the path of the student to the desired subject or book; the contents of the volumes may be elaborately set forth in every form of cataloging helps; and every feature of the building even may be dominated by attention to specific needs of students and readers; and still, possibly there may be a missing factor, the operation of which is necessary to the maximum of effective assistance. It is true that library "machinery" is excellent in its way, and any library which disregards the necessity for bestowing much time upon it and effectually avoiding every tendency to clogging, or congestion, or irregularity, will do so to its cost. But long observation has everywhere confirmed the conviction that a reliance solely on "general methods," those for the public at large, is like using a rake with teeth too far apart, and inevitably some of the library's most vital opportunities for usefulness will slip past, unrecognized. The personal contact of the library officer with the individual reader is still needed after all else has been said

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<sup>1</sup> The extraordinary possibilities of this line of work are indicated in Miss Katharine L. Sharp's "Libraries and university extension," Library school, Albany, 1892.

<sup>2</sup> *L. j.* 16:175.

<sup>3</sup> *L. j.* 17: 445-47.



and done. In libraries where the force is inconveniently small, one of two results is likely to follow. On the one hand, exclusive dependence may be placed on the perfection of the library "machinery," with the result of great smoothness of routine administration, but also with the resulting waste of opportunities just referred to. On the other hand, while the advantage of the needed contact of reader with library attendant is secured, this comes as a sort of "running fire" all along the line, and there is consequently the disadvantage of introducing a constant element of uncertainty into the accomplishment of the routine work<sup>1</sup> of the respective attendants appealed to. One of the earliest libraries to respond to the demands of this problem and to concentrate this work upon a single officer, was the Boston public, in which, from the first, the volume of assistance to readers has undoubtedly been larger than in any other American library. Several other libraries have, within more recent years, established an information desk;<sup>2</sup> and in one<sup>3</sup> of these at least the officer is provided with no other work, but finds every moment of time claimed by the applications of individual readers and students for specific assistance and direction in the use of reference books in pursuing inquiries, etc.

There is plainly a growing tendency among libraries to adopt this fundamentally effective feature of assistance to readers, but there are certain aspects of the matter which should be clearly recognized, else disappointment may result. For instance, so strongly does one librarian fear the tendency of this concentration on one clerk, to produce apathy in the matter of assistance to readers on the part of all the others, that he would take the risk of constant interference with the time of every clerk. There are several ways of meeting this objection. Where the force is large, or of "average size," it is possible to arrange a comprehensive scheme, whereby, at some time during the week or month, the service of every other member of the staff is called into requisition, as a substitute, either at meal times, half holidays, vacations, or other necessary absences of the regular clerk. Extremely useful also in the same direction, though for other reasons besides, is the practice of holding monthly or fortnightly "staff meetings,"<sup>4</sup> followed with great success in at least one library, in which the study of the many-sided subject of assistance to readers, both in the shape of specific instances and of comprehensive general principles, is a constant feature. While it is not possible, even by this method, for a library to bring all the beneficial influences of the "library school" to its own doors, in one particular it is invariably effective; namely, in developing on the part of all the staff not only a true esprit de corps, but, in particular, an eagerness to render the best service of which they are capable,

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<sup>1</sup> Prov. Pub. Library, 13th an. rept., 1890, p. 9.

<sup>2</sup> *L. j.* 16: 271-72, 263; 18: 178, 179, 219.

<sup>3</sup> Prov. Pub. Library, 13th an. rept., p. 9; 14th, p. 10-11; 15th p. 10.

<sup>4</sup> Prov. Pub. Library, 13th an. rept., 1890, p. 14.

in this matter of assistance to readers. The fundamental importance of this "unperfunctory" element in the work of the information desk is not easily to be overestimated. Indeed, it will be far better not to establish this position at all than to be obliged to fill it with one who gives it a careless, an unintelligent, above all, a perfunctory attention. This is one of those positions where the bright face of the attendant meeting the application, timidly perhaps presented by the reader or student, puts the latter at once and completely at his ease, and goes far to make actual the ideal suggested by Mrs. M. A. Sanders at the February, 1893, meeting of the Massachusetts Library Club, that the librarian should meet the reader in the position of a host or hostess welcoming a guest. There is, moreover, another side to this matter even, due to the fact not only of the immensely differing needs of individual readers, but of their no less widely differing temperaments and capabilities as well.<sup>1</sup> To read that it fell to a certain librarian to hear during one and the same week two such apparently contradictory commendations of this feature of his library as the following, may suggest a paradox: "I like your information desk; one is put so completely at his ease by the attendant's interest;" and "I like the service of your information desk; it is so impersonal." Yet it only goes to show the success with which the attendant had suited the manner as well as the material of the assistance to the varying conditions of the two individuals.

The successful coordination of apparently divergent conditions is not an easy matter here, any more than in architecture; yet it is in triumphs such as these that the mastery of the art is shown, in the one case as well as in the other. Not only trained intelligence and genuine interest, but tact and discrimination, are requisite here; and it should be borne in mind by library directors, not only that the establishment of the information desk as a distinct position will involve a generous allowance of additional time and the consequent expense, but also that the officer who can successfully meet the requirements of such a position is necessarily one whose services should be well remunerated. There is, doubtless, a certain quality of intellectual force and helpfulness in the books themselves, in the case of a library of average excellence, and others besides Sir Walter Scott have profited from the mere opportunity of "browsing in libraries;" yet to base on this fact an argument against employing well-directed efforts of assistance, when needed, is to repeat the fallacy underlying the familiar "self-made-man" argument against education. The man, in an instance of the kind named, would have made, not an inferior, but an even greater achievement, if, to his undeniably exceptional native gifts, he had been able to add that which the discipline of education can supply. The books will possess not a less, but a far greater degree of efficiency if to their inherent vitality and effectiveness there shall be joined the minute and comprehensive study of the needs of readers, as related to the books, on the part of a thor-

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<sup>1</sup> *L. j.* 16: 297-300.



oughly equipped library officer. That the needs referred to really exist, the experience of the larger and smaller libraries alike goes to show. "The timidity of the average person desiring information, and especially the stranger who comes to the library for the first time, is a factor in library administration which must be acknowledged and dealt with. \* \* \* We have seen person after person enter a library, and, after a brief struggle with the card or printed catalog, leave the building. \* \* \* Yet, whenever we have spoken to such people, we have found they wanted a definite thing."<sup>1</sup>

It is the significance of instances like these that has led one of the most progressive of librarians to distrust the desirableness of universal access to the shelves, since in this way much the larger part of the class of readers referred to would miss the personal guidance and assistance which they obviously require.

In at least two of the libraries where this personal element of assistance has been most comprehensively developed, this fundamental rule is insisted on, that if the library officer to whom a question happens to be brought has the slightest reason to suppose that the information which he is able to supply is not an adequate and satisfactory answer, the question must be referred to some other library officer who is reasonably sure to be able to do this. In one of these two libraries, printed forms<sup>2</sup> are kept constantly at hand for this purpose. Sometimes it will happen that the library itself is found not to be in possession of the work or works which alone will answer the inquiry. In this case either an order is at once given for the book, or recourse is had to the scheme of library transfers mentioned elsewhere. Even when the reader finds the library classified by a comprehensive system, sufficiently closely classified to respond to his varying needs, supplied with a subject index, as a ready key to the whole, arranged on the shelves with as close an approach to correspondence to abstract classification as is found practicable, and the shelves accessible to the intelligent reader wherever practicable, he must, after all, have these forms of assistance, plus the privilege of a special study room where the bringing of books from other portions of the library may correct the inadequacy of shelf arrangement already referred to; plus the helps furnished by bibliographies in supplying a bird's-eye view of the subject not possible in this particular library; plus the helps supplied by subject catalogs for subjects on which no bibliographies have been printed; plus all reference lists and other miscellaneous varieties of help. And even this is not sufficient unless we add, also, the librarian himself, that he may correct and supplement all deficiencies and inadequacies of the various kinds specifically mentioned above, by his own trained, interested, and effectual service of the reader.<sup>3</sup>

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<sup>1</sup> *L. j.* 16: 263.

<sup>2</sup> See *Prov. Pub. Library*, 14th an. rept., 1891, p. 11.

<sup>3</sup> See *A. L. A. Proc.*, 1890, p. 9.



EXPERT ANNOTATION OF BOOK TITLES—INDEXING LITERATURE  
OTHER THAN BOOKS.

By GEORGE ILES, New York.

There is much in a welcome. The stranger who enters the Boston Public Library is met almost at the threshold by an attendant who invites questions and answers them in the most helpful possible way. To those unfamiliar with the card catalog he explains it; he can often supply a forgotten name or a title; frequently he names a book his questioner needs and has never heard about. Such an officer makes people feel that the public library is really theirs; that its machinery, formidable though it seems, is in fact simple; and when, as in Boston, the officer charged with reception moves about quite freely, instead of occupying a desk clerk fashion, his hospitalities can be multiplied. Next in value to his services, to a stranger at least, comes the aid of a card catalog, from its inclusiveness vastly to be preferred to any catalog in book form, and, speaking from my own experience, best arranged under a single alphabet. The card catalog has now a formidable rival in the Rudolph continuous indexer, which novel device, from its nonliability to wear or soiling, removes the excuse oftenest given for withholding the card catalog from the reader. Only when the full catalog, whatever its form, and the shelves themselves are at the free disposal of the public, does the public library fully stand by the promise of its open door.

But a reader, specially of the serious stamp, needs yet more; it is not enough that good books in abundance be offered him, for how shall he know which of them can best serve his purpose? Suppose that he is to inform himself regarding the principles underlying the transmission of electricity from Niagara Falls to the lamps and motors of Buffalo, which of the scores of books presented in the department of electricity will take him, beginner that he is, and lead him to a full comprehension of the subject? Or, imagine him to be curious respecting the latest achievements of the camera—its seizure of stars beyond the telescopic range, its interpretation of color in black and white with truth of effect, its reproduction of color itself, or its supersedure of the graver—which of the many works on photography at hand will answer his questions in the clearest way? If, in a very different branch of literature, he seeks to know something about the government of the nation, a topic treated by hundreds of writers, to which of them may he with confidence turn? Or, if he desires to acquaint himself with the fundamentals of political economy, what authorities shall he choose?

A response to these inquiries is given in a card catalog of four subsections of the model library shown by the American Library Association as part of the Columbian exhibit of the National Bureau of Education, to go at the close of the exhibition to the Bureau's headquarters at Washington. There following each card title is a note—in the

department of electricity by F. B. Crocker, professor of electrical engineering at the school of mines, Columbia College, New York; in that of photography by the committee on literature of the Camera Club, New York; in that of American Government by Dr. J. C. Schwab, instructor of political economy, Yale University; and in that of general political economy by E. R. A. Seligman, professor of political economy and finance in the school of political science, Columbia College. The notes printed on slips are distributed at the exhibit in Chicago and are also to be had from the Bureau of Education, Washington. It is hoped that in connection with the American Library Association a bureau will be established for systematically extending this plan of appraisal to the whole working literature of education. To be as useful as it can a note card should tell: Whether a book is a mere compilation or a transcript of fact and experience by a doer or a worker; the comparative merits of various editions where they exist; for what classes of readers a book is best suited; its special excellencies or defects, and important errors, if any; how it compares with other books in the same field, and if in its field—let us say of taxation, or money—there is no book up to date, reference may be made to sources of information in periodicals or elsewhere; if a book treats a subject in debate, as homeopathy, protection, or socialism, fact and opinion will be carefully distinguished, and views of critics of opposed schools may be given; and, finally, the best extended reviews will be mentioned. The annotator should append his name and place with date. To this signing I find no objection raised by the reviewers whom I have thus far engaged.

It has been estimated that books of importance in ordinary demand do not exceed 10,000. It is suggested that these works, divided into departments, be selected and annotated for public libraries by the men and women most fit for the task. Every day these men and women are asked for direction in the fields of literature they have made their own. Through the public libraries their judgments can be placed at the service not only of an individual here and there, but at that of every inquirer in America. Guidance here will chiefly come from teachers whose life work it is in the study, the class room, or the laboratory, to know the latest books in a specific domain and master the best, whether old or new. To these teachers can be joined scholars and critics of distinction specially versed in history, belles-lettres, the literature of art. So far as an appeal has been made to teachers and others on behalf of this new aid to readers, the most cordial response has been given; busy men have turned aside from pressing tasks to write the notes offered in the model library. Their generous assistance has arisen in seeing that the need for the help contemplated is urgent and growing. Alliances between the public school and the public library are becoming closer. These alliances, together with Chautauqua and similar agencies, prove that popular reading can rise to a new interest and value when it has consecutiveness and purpose. At the same time new



books abound and superabound. Clearly it is more than ever desirable that trustworthy pilots be organized to spare the people the time and effort they now waste in reading books other than the best, to warn them as to defective statements and loose arguments, to invite them into paths of study which without a guide they would never dare to enter. The notes, of course, will often name books not possessed by a library, in which case not only will a reader be told about a book he needs, but the librarian will receive a hint for buying which will be of inestimable value when the system has matured sufficiently to keep pace with the latest issues of the press. As public libraries multiply and strengthen we may expect the notes to bring to birth a class of valuable books, translations of sterling foreign works and books by American authors, which to-day could not afford the advertising broadside required to hit here and there the scholars who want them. In the *Atlantic Monthly* for June, 1893, Mr. Justin Winsor says that the Société Franklin, of Paris, which acts as a central agency for the libraries of France, has found that with the sale its circle of libraries assures, a trained writer and a responsible publisher can be engaged to supply any needed book.

As to the financial side of the plan for book notes. The cost of annotating 10,000 important books, including sending note cards to, say, 500 libraries, is estimated at \$100,000, and the time necessary for the task at one year. To continue the work on new books of the same relative importance, as they appear, would probably require \$10,000 a year. Can this amount be collected from the libraries served? It is doubtful. As elsewhere in the field of education, a service worth vastly more than its cost can not be paid for by the men and women to whom it is rendered. An opportunity thus offers itself for an endowment which at no greater outlay than that needed to establish and maintain a single good library can double the usefulness of 500.

It is said, with truth, that in many towns and cities there is but slight demand for the guidance proposed in this scheme of book notes; but is it disputed that that demand ought to be increased, and how can it be increased better than by supply? To take a homely illustration, has not the advent of the Italian fruit vender, passive though he is, greatly stimulated the consumption of bananas and oranges? Let the trustees of literature learn of him, and rest content only when the treasures in their keeping are hospitably proffered to the people, the invitation made as telling as it can be by having the best critics join in it. If the ignorant choose to remain untaught, to miss the light and lift that books stand ready to bestow, let them do so only when every means of winning their interest has been exhausted. In this matter the recent history of our public libraries is full of promise. Every increase in their stock and store, every improvement in their arrangement and accessibility, has roused appreciation in a degree which has richly repaid the means and toil expended. Let public libraries not



only contain but indicate the most helpful books and we shall find the public library more than ever the people's university. It constantly befalls that a great book reaches us too late to bring its best message; the regret, "why was not this book pressed upon our attention long ago?" should lead us to do what we can to spare others the labor of mining any vein but gold.

Up to this point we have had in mind only the serious reader; it is time that we remembered the reader who simply seeks recreation. Scott maintains his primacy as a novelist, yet it is worth while to learn in what particulars modern research, historical and antiquarian, must affect our estimate of *Ivanhoe*, the *Talisman*, and *Quentin Durward*. In the life of Darwin by his son we are told that the naturalist was wont to refresh himself with the novels of Mrs. Oliphant, but who shall tell us which of her many romances are best worth reading? Browning, too, is abundantly represented on library shelves, but which of his longer poems best deserve perusal and why? His works come to us as 17 lusty tomes, while few students care for a single book of selections, even though it be the poet's own. When the literature of instruction has been surveyed by the annotator and its guide posts set up, it will be fitting that other literature receive the same attention, of necessity with a lighter and less laborious touch.

On the general lines here suggested a pioneering attack has been undertaken by Mrs. Augusta H. Leypoldt, editor *Literary News*, New York, and the present writer. Their project is to compile and edit an annotated list of about two thousand books suitable for girls and women and their clubs. This list will comprise carefully chosen titles in the whole round of instruction and recreation. The works of fiction will be selected and annotated by a reviewer for the *Nation*. Other contributors of mark have agreed to cooperate in preparing the list which, as far as it goes, will be of service to all public libraries, to readers and inquirers everywhere. The list will be published by the American Library Association in October, 1895. It is expected soon to enlarge its departments of art and music so as to fairly give them complete scope.

Let us now return to the reader in science and consider one of his perplexities, born with the present generation. Day by day he finds periodicals multiplying to so prodigious an extent that the fuel of information threatens to put out the fire; on every hand he sees the serial steadily encroaching on the sphere of the book. For this there are many reasons, the weekly or monthly can tell a fresher story than the book, it can tell a story too short for a book; advertising which falls on the book as a crushing tax provides the periodical's main support; through the wider sale of periodicals they give buyers more for their money than books possibly can; many a book on technical science is but a reprint or a summary of what has appeared in serial form, a

circumstance, by the way, of no little advantage to the book. And where in the swirl that now encircles the press shall the reader find what he seeks? If he is pursuing the causes which have cheapened steel, he must consult not only the journals devoted to mining and to steel manufacture, he will also have much to learn from the engineering and architectural press. And so aggressive is the enterprise of the magazines that the latest word regarding the domination of the air by the inventor, may come in the *Century*, and a review of the cotton-oil industry in the *Engineering Magazine*. Here it is plain that to be of value an index must be very full.

An attempt to meet the emergencies of the case has been made by the *Engineering Magazine* at Chicago, the *Review of Reviews* of New York, and other publications, each presenting a list of articles in selected periodicals; none of these lists is full enough, yet the labor of consulting them, particularly as a year approaches its end, is what few readers have time for. The linotype, which enables a title to be cast as a solid line of metal, promises to lend itself to the quarterly and annual recapitulations here demanded. The world of science, as never before, is to-day roused to the necessity of taking stock of its wealth. In the Transactions of the American Society of Mechanical Engineers, vol. 14 (1893), Mr. W. L. Chase presents a plan for extending the Dewey classification to engineering literature. The Royal Society of Great Britain announces an author index of its monumental list of technical papers. Mr. H. Beckhold, of Frankfort-on-the-Main, began the issue, beginning with 1894, of a monthly and yearly index to papers in pure and applied chemistry; the Physical Society of London in 1895 began to publish a monthly pamphlet giving abstracts of all the papers which appear in the principal foreign journals of physics. And a concerted movement is afoot which aims, by 1900, at organizing on an international basis, a comprehensive index to all scientific literature. This done, experiment in every workshop and laboratory of the world can be supplemented by full information of every recorded result achieved in all other workshops and laboratories. Then the man of research can avoid the blunders of his fellows, need not uselessly duplicate their labors, and can seek their cooperation in ambitious tasks beyond his individual reach.

Were books and periodicals disposed and indicated as they ought to be, we should still be far from having exhausted literature. There remains a flood of publications, many of which contain valuable data for the investigator, fruitful seed thoughts for the student and literary worker. I refer to the transactions of learned societies, the proceedings of institutes and academies, of such government offices as issue reports, labor bureaus, geological surveys, and the like. So oppressive is the multiplication of these that the president of the British Chemical Society, in 1894, urged the consolidation of authoritative scientific organs throughout



the English-speaking world. This however, would be only in part a remedy. Suppose that the rate at which the consumption of liquor advances or recedes is to be ascertained, the information is set forth authoritatively in reports of the Secretary of the Treasury, where incidentally we are told how far the use of strong waters has been affected by the competition of beer and light wines. One would scarcely look in the Proceedings of the American Institute of Mining Engineers for light on the labor problem, yet the volume for 1890 contains a masterly discussion of it by Hon. Abram S. Hewitt, in the course of his treatment of "Iron and labor." Two examples, these, of hundreds which might be cited. In such documents as have been named we tap the stream of knowledge at its very source, and yet for lack of indexing how little is done with a wealth of material it costs so great pains to create! Mr. Talcott Williams, of the *Philadelphia Press*, who has given the question a good deal of thought, estimates the expense of indexing this important branch of literature at \$50,000. His suggestion is that the work be attacked cooperatively, and that publication of the manuscript indexes be sought at the hands of the Smithsonian or other public-spirited institution. To the Smithsonian a debt beyond estimate is already due for its issue of bibliographies, the last and greatest of which is Dr. H. Carrington Bolton's bibliography of chemistry. Mr. Williams believes that a considerable number of learned societies could provide the money needed to index their transactions; for the rest he proposes an appeal to unpaid volunteers such as those who, under the leadership of Dr. W. F. Poole and Mr. W. I. Fletcher, have in times past done so much to bring the bread of knowledge within reach of the people.

Were all this accomplished, together with the indexing of current periodicals and the annotation of books, I know not what the reader could wish for in the way of stock-taking in literature; everything of importance in print would be placed at his service. If the librarian's finances forbade his having other than a small library, he would nevertheless be able to tell a reader where to get what he wanted, and perhaps through the cooperation of larger libraries be able to procure it for him. Speed the day when between the seekers and the light there shall be no obstacle of any kind, the day when the generous, the wise, and the informed shall give their less favored fellows all the aid they can!

#### SCRAPBOOKS.

By W. A. BARDWELL, Librarian of the Brooklyn Library, Brooklyn, N. Y.

Among the minor departments of library work that have, in some institutions, come to be recognized as useful and valuable is "scrapping," or the collecting odds and ends of information not contained in books



or the cyclopedias, but clipped from newspapers or from magazines not covered by Poole's or the cooperative indexes. In this way may be preserved for convenient reference the most recent facts, which otherwise would be buried and lost in the mass of back files.

Thomas S. Townsend's "War library of national, State, and biographical records," the largest collection of scrapbooks in existence, is still deposited at the Columbia College library, New York. This work is in more than 100 volumes, each as large as a man can easily lift. The work is well indexed and is an invaluable fund of material relating to the civil war. The arrangement is chronologic from December, 1860, to the end of General Grant's second administration. The price at which this collection is held is \$50,000, though Mr. Townsend would have sold it to the United States at a somewhat lower figure. He has also suggested a scheme to dispose of it by means of popular subscriptions, each subscriber having the right to vote where the work shall be deposited.

The Los Angeles public library has recently formed a plan for collecting information regarding local interests, which is thus described in their library bulletin:

#### CLIPPING BUREAU.

The realization of the utter lack of practical books on the local manufacturing, agricultural, and industrial interests and the impossibility to procure such information has resulted in the project of a clipping bureau, and a systematic segregation of reliable matter bearing on these subjects is to be begun at once. A practical scheme has been worked out to handle and prepare this material. The chamber of commerce has agreed to cooperate to the extent of furnishing material on hand, and we earnestly invite the further cooperation on the part of fruit growers, bee keepers, fruit packing and drying specialists, and others who have from time to time made scrap collections. We invite them to come to the library to have our system explained to them.

#### LIBRARY SCRAPPING.

In order to preserve the great amount of floating material on topics of local value constantly appearing in newspapers and periodicals, it is proposed to detail special attendants to the collection, segregation, and arrangement of this matter. The clippings in the first place will be kept in a series of indexed envelopes, and when enough material has accumulated on any one subject it will be carefully examined, and only that of some real value will be retained. For final preservation the clippings are to be pasted in scrapbooks designed for this purpose. The binder was instructed to furnish a quantity of ordinary manila paper, cut 11 by 17 inches, and folded into sections of 10 leaves each, and punched on the fold. These leaves will hold the clippings, and the sections may be strung together like the sections of a book. No one section is ever to hold clippings on more than one subject; thus there may be a series of sections on the orange, and when these are sufficient in number they will be bound, forming a complete volume of statistics on orange culture. The subjects for clipping purposes will be assigned, and it is anticipated that by this expedient many of the drawbacks of the ordinary scrapbook will be done away with. Suggestions for modifications will be considered and results noted.

Since the report on scrapbooks in 1889 a considerable number of libraries have done some work in clippings. A circular recently addressed to more than 100 representative libraries throughout the country has elicited responses from about half that number of librarians who cultivate the general art of scrapping to some extent, while others who have not yet found time for it are favorably impressed with the idea, and confident of its utility. The information supplied in response to the circular is epitomized below:

*Scraping work in certain libraries.*

Name of library.	Subjects or specialties in scraping.	Sources from which material is obtained.	Method of preserving.	Method of indexing or classification.	Extra help required, or library staff only.	Utilized by readers.
Albany, N. Y., State library.	Regents' work, higher education, library economy and history, metric system, simplified spelling.	Through press-clipping bureau.	Mounted on manila sheets and kept in manila folders or common-sense binders.	Arranged by decimal classification and shelved with books on same topics.	No outside help; done by junior clerks.	Yes.
Ann Arbor, Mich., State University library.	Miscellaneous .....	From current publications.	Where there is considerable matter on any important subject it is made into a pamphlet and bound. Pasted in a scrapbook.	Not yet indexed, except when an occasional volume is bound up.	No help beyond regular staff.	There is some interest in the collection but it will be more available when classified.
Atlanta, Ga., State library.	Personal clippings kept by librarian.	Current publications.	Pasted in an ordinary scrapbook.	Arranged chronologically.		
Baltimore, Md., Enoch Pratt free library.	The library and its founder.	Current newspapers, etc.	Mounted on manila paper and kept in Woodruff files or tied between pasteboards; subject is written at top.	The classification is practically self-indexing.	Daily clipping not attempted, nor extra help required.	Yes; when collected with discrimination.
Baltimore, Md., Johns Hopkins University library.	History, economics, and subjects relative thereto.	Current publications.	Mounted on manila paper and bound.	Index in front of volume.	Not now continued.	Occasionally used.
Boston, Mass., public library.	Biographic sketches of distinguished persons, with portraits, when obtainable.	No; not now kept up.				
Boston, Mass., State library.	Local history .....	Any available source.	Mounted on sheets and bound like pamphlets. In large envelopes .....	Classified by subjects.		Quite useful.
Bridgeport, Conn., public library.	Miscellaneous and illustrations, current topics, recent political events.	From current newspapers and magazines, such as are not bound.		Envelops are marked with subjects and alphabetized in a case.	Kept up by the regular staff.	Moderately used; quite useful when on events of immediate interest.
Brockton, Mass., public library.	Reviews of books added.	Newspapers .....	Pasted in record book.	Chronologically arranged.	None.	Use moderate and practice kept up.
Brunswick, Me., Bowdoin College library.	Alumni of the college; State of Maine, its local history, biography, education, etc.	Current publications.	Pasted on sheets and placed in temporary binders.	Indexed .....	No outside help required.	Yes.
Buffalo, N. Y., the Buffalo library.	Current biography; matters of local interest.	Local papers; from magazines and weeklies; matter of local interest or authorship.	Pasted on manila sheets and made into pamphlets, 6 by 9 inches, or folded in manila envelopes, same size.	Envelops and pamphlets are classified, cataloged, and shelved in boxes with books of like classes.	Articles in newspapers are noted each day; at end of month these are clipped, cataloged, etc.; no extra help.	Very useful as far as they go, but not yet very extensive.
Burlington, Vt., Fletcher free library.	Vermont bibliography; the library.	Current publications.	Pasted in scrapbooks.	Not indexed .....	No.	Occasionally some special topic.



Burlington, Vt., University of Vermont library.	.....do.....	.....do.....	Matter relating to the university, arranged chronologically; alumni handbook is indexed.	Kept up to date, but by regular staff only.	Very useful.
Brooklyn, N. Y., the Brooklyn library.	Current newspapers, and from any available source.	Pasted on manila sheets 9 by 12 inches in size, when folded once; the sheets, kept in close boxes to exclude dust, are laid on one another so that additions can readily be incorporated.	The boxes are labeled and arranged accordingly; the labels serve as index to contents of boxes, which are of wood, covered with paper, and standing upright.	Work done by regular staff at odd times.	Has been found very useful in giving information too recent to be found in books.
Cambridge, Mass., public library.	Local.....	Scrapbooks.....	.....	Most of the collecting is done outside the library.	Not yet used by the public.
Chicago, Ill., University of Chicago library.	Current publications.	Pasted on blank sheets and kept in common-sense binders.	Decimal classification.....	No extra help required.	Very useful; shall do more as soon as able.
Cincinnati, Ohio, Y. M. mercantile library.	Current newspapers, etc.	Pasted in scrapbooks.....	Carefully indexed.....	Extra assistance could be used if we could afford it; it is done in leisure time by attendants in room.	Yes.
Cleveland, Ohio, public library.	Daily papers mostly.....	In scrapbooks indexed.....	.....	Kept arranged to date by the library staff.	Already very useful, with good possibilities in it.
Dover, N. H., public library.	Current newspapers, chiefly New York Tribune.	Kept in envelopes of uniform size, arranged alphabetically.	Indexed in card catalog.	.....	.....
Evanston, Ill., Northwestern University library.	Sparingly from current publications.	Pasted in scrapbooks.....	Arranged chronologically.	.....	.....
Fitchburg, Mass., public library.	Current publications.....	.....do.....	.....	Arranged to date by regular staff.	Quite useful.
Gloversville, N. Y., free library.	.....	.....	.....	.....	.....
Harrisburg, Pa., Pennsylvania State library.	From press-clipping bureau.	Mark Twain scrapbooks.	Classified and indexed as they are placed in the books.	Work done by delivery desk assistant when not otherwise employed.	Exceedingly useful and valuable.

*Scrapping work in certain libraries—Continued.*

Name of library.	Subjects or specialties in scrapping.	Sources from which material is obtained.	Method of preserving.	Method of indexing or classification.	Extra help required, or library staff only.	Utilized by readers.
Hartford, Conn., Hartford library.	Illustrations of costumes, architecture, portraits, works of great artists; college amusements; working girls' clubs.	Current publications.	Pasted in books .....	Kept in separate books; one to each subject.	Work done at odd moments by librarian and staff.	Yes; indeed.
Kansas City, Mo., public library.	Biographies of living people; current events not found in periodicals.	From newspapers.....	Pasted on manila cardboard strips, 6 by 11 inches.	Alphabetized and kept in boxes in pigeon-holes.	Arranged to date by library staff.	Extremely useful.
Topeka, Kans., Kansas State Historical Society.	Kansas history.....	-----	Paste them on one side of book paper, size 6 by 9½ inches, one column to the page, and keep by subjects until there are sufficient accumulations to bind.	Classified by Dewey system.	They are scarcely arranged up to date; they are from time to time cut and mounted by the state printer as extra binding.	Very useful.
Los Angeles, Cal., public library.	California agriculture, botany, history, irrigations, statistics.	From current publications; obtained from far and near.	Pasted on manila sheets and finally bound in volumes.	Material carefully classified, and when sufficient to make a volume is shelved with other books on same subject, with same subject, with type-written index in front of volume.	Done as extra work by the page by attendants when off regular duty; have only recently commenced this work.	Confidently expected that the collection will be very useful.
Lowell, Mass., free public library; MITLeseux Mechanics' Institute.	Current events, general literature, historic buildings and places, living authors, musical, World's fair.	From current publications.	In envelopes at first; afterwards the more desirable material is pasted in scrapbooks; much is weeded out if published in book form later.	Envelops are marked by subjects and alphabetized scrapbooks are indexed.	Kept to date as far as can; papers are inspected and marked, then at end of week are reclassified; depend on volunteer help largely.	Used occasionally and found valuable, as they contain material not to be found elsewhere.
Lynn, Mass., free public library.	Local biography, history, etc.	From any available source.	Scrapbooks .....	Indexed in card catalog.	Range is limited; have some outside help in gathering clippings.	Found quite useful to readers.
Madison, Wis., Wisconsin State Historical Society.	American and Wisconsin history, Indians, archaeology, biography.	Current publications.	Short clippings are pasted in scrapbooks, a book for each subject; long articles are mounted on large note paper and are cataloged as pamphlets.	Indexed and classified..	Kept up to date; part of time of one assistant being devoted to looking over and marking articles for clipping.	Quite useful, as everything is so thoroughly classified as to be accessible to all.
Medford, Mass., public library.	Authors, local items, libraries, pictures of libraries.	.....do .....	In envelopes and scrapbooks.	Envelops alphabetized; scrapbook indexed.	No extra assistance....	Thought to be useful.

	The library.	Any source.	Pasted in scrapbooks.	Not indexed.	Useful to the staff.
Minneapolis, Minn., public library. New Bedford, Mass., public library.	History and genealogy.	Local and New York newspapers.	Mounted on 80 sheets and in scrapbooks.	Arranged alphabetically.	Quite useful so far as developed.
New Haven, Conn., Yale College library. New London, Conn., public library.	Biographic notices of graduates; history of the college. Arctic explorations; modern authors.	Current publications.	Mounted in scrapbooks with binder's paste. In scrapbooks.	Indexed.	Quite useful.
New Orleans, Howard Memorial library.	History of the library; Louisiana folklore.	do.	In envelopes.	Indexed and numbered.	Is thought that it will be very useful later on.
New York, Apprentices' library.	Illustrations.	Back numbers of illustrated papers.	In manila scrapbooks mounted with binder's paste. Collected but not mounted. Pasted in scrapbooks.	Not arranged.	Very much used.
New York, Columbia College library. New York, free circulating library. New York, Y. M. C. A. library.	Columbia college; purchase of new site, etc. Libraries, chiefly the N. Y. F. C. L. The library; the A. L. A., and library matters; important events.	Current publications. Mainly from N. Y. newspapers. Current publications; a few scrapbooks have been given.	do.	Arranged chronologically. A separate book for each subject; not indexed.	Is thought that in time this material will possess much historic interest. Decidedly yes.
Omaha, Nebr., public library.	Agriculture, famous speeches, fugitive slaves, holidays; local history of the Northwest, Hawaii, annexations of Cuba, Canada, etc.; World's Fair.	Daily papers (after one month), weekly papers (after two months); periodicals, such as are not indexed in Poole, etc. From current periodicals, and from newspapers when the article has substantial value.	Mounted on manila sheets and kept in boxes.	Classified by subjects.	
Palo Alto, Cal., Leland Stanford Junior University.	Railroad matters, economic, historic, and technical.	Much from local newspapers.	Partly pasted in donated scrapbooks, and partly unmounted.	Scrapbooks unindexed; unmounted scraps are classified.	Quite useful to the students of railroad affairs.
Pawtucket, R. I., free public library.	Civil war, 23 v. f.; local history, from 1801, 16 v.		In boxes at first; afterwards pasted in books. The earlier volumes were part of a private collection. In 6½-inch manila envelopes; name of subject typewritten in upper left corner.	The 23 volumes arranged chronologically; the 16 volumes are indexed.	Not very largely used.
Pittsfield, Wis., State Normal School library.	General subjects; articles of merit on any useful topic.	Publishers of daily papers give their exchanges for scrap-booking purposes.		Filed in alphabetic order like a dictionary catalog; new clippings incorporated as received.	Quite useful; often supplies students with material not to be found elsewhere.
Philadelphia, Academy of Natural Science.	Reports of meetings of the Academy.	Current newspapers.			Useful to the academy.



## Scraping work in certain libraries—Continued.

Name of library.	Subjects or specialties in scraping.	Sources from which material is obtained.	Method of preserving.	Method of indexing or classification.	Extra help required, or library staff only.	Utilized by readers.
Poughkeepsie, N. Y., Vassar College library.	Woman's education, woman's work; Vassar College.	Current publications.	Pasted in large invoice books.	Not indexed, but roughly classified; easily accessible.	The work is kept up by a student.	Quite useful.
Princeton, N. J., College library.	Civil war; bibliography.	From clipping bureau to some extent.	Bibliographic notes in envelopes with tops cut off and treated like cards in a catalog.	No.....	An immense mass of material not yet classified but waiting the results of inquiries.	With time to develop clipping system it would be of great practical advantage.
Providence, R. I., Brown University library.	Clippings regarding the college for forty years.	Current publications.	In scrapbooks.....	Arranged chronologically.	Kept up without extra help.	Most useful book in the library.
St. Louis, Mercantile library.	Civil war; St. Louis matters.	No new collections made; those on hand were presented.	.....	.....	.....	Very seldom used.
St. Louis, public library.	Biography, local celebrities, and minor notabilities; holidays; the library; St. Louis.	Entirely from current publications.	Pasted in scrapbooks.....	"Book of Days" classified; indexed in all cases.	The work kept up by the reading-room attendant, and one other assistant.	The collection of library cuttings (5 or 6 v.) is very useful to staff; the "Book of Days" is quite useful to members.
St. Paul, Minn., Historic Society.	Minnesota history and biography.	Mostly from Minnesota journals.	Mounted in scrapbooks of heavy white paper.	The book ruled into columns, pagged and indexed.	About a dozen are filed; much is ready to be mounted; work done by regular staff.	Very useful; the material contained in the completed books has many times been of great value to seekers.
Salem, Mass., Essex Institute.	The institute obituaries; personal notices; Salem.	Salem newspapers and a few others.	Pasted on 8° manila sheets and bound each year by itself.	Classified and indexed.	Kept up with in a month; no outside help.	Quite useful.
Salem, Mass., public library.	The library.....	Current newspapers.	In Mark Twain scrapbooks; but shall use some other kind hereafter.	Arranged chronologically.	Kept up by regular staff.	Useful to librarian.
Philadelphia, Pa., Wagner Institute of Technology.	(1) Everything concerning libraries; (2) scientific scrapings; (3) everything relating to the institute.	.....	In envelopes arranged alphabetically (dictionary).	Arranged alphabetically.	Arranged by file and starts at any time.	Very useful in helping young essay writers, when the subject was one not fully treated in reference books.
Washington, D. C., Library of Congress.	Autograph letters.....	.....	Bound up in scrapbooks.	.....do.....	.....	.....
Washington, D. C., Library of the Surgeon-General's Office.	Yellow fever epidemics of 1878-79; medical jurisprudence.	.....	Pasted on sheets and bound in scrapbooks.	.....	.....	.....

Wellesley, Mass., College Library.	Economics; modern history.	.....	Mounted on sheets and kept in portfolios.	Classified by Dewey system; new material can be incorporated at any time.	Not kept up to date; the work was formerly carried on by the college departments.	Not found to be very useful.
Worcester, Mass., Antiquarian Society.	Biography; civil war.....	Not obtained from current publications.	In envelopes .....	Classified and appear in the card catalog.	Arranged to date and kept up by the cataloger.	Very valuable in some instances, as it may be the only available material upon the subject.
Worcester, Mass., public Library.	General.....	Current newspapers, etc.	Pasted on manila sheets 7 by 9½ inches.	Kept in heavy manila 8 by 10 inch envelopes and arranged on shelves with books on same subjects; cataloged same as book.	Regular staff .....	

In the fall of 1892 the Society of Old Brooklynites deposited in the Brooklyn library a very interesting collection of very elegant pictorial scrapbooks, carefully mounted, in six elephant folio volumes. It consists of several thousand pictures and engravings, including many portraits of distinguished personages. The pictures were collected and mounted by Dr. Nellie M. Flint, a granddaughter of Capt. David Morris, of the prison ship *Jersey*.

Our own collection of biographic clippings have proved very valuable in supplementing biographic dictionaries. Local clippings on Brooklyn, Long Island, and New York contain much not to be found elsewhere; and the collection of fugitive poems, quotations, etc., has many things not found in books. Our clippings are thrown into square boxes till there is time to sort and paste them. Some libraries keep their clippings arranged permanently in such boxes. Probably the best method of preserving for ready reference is to paste the clippings on pieces of manila paper, or on sheets folded once, of uniform size. These sheets can be laid on each other and kept in boxes, and further additions incorporated as received, the contents of each box being indicated on its back.

The advantage of pasting on sheets folded in the middle is that they can at any time be readily bound and shelved with books in the class to which they belong. This relieves the scrap collection of some of its bulk, and, as has been suggested, admits weeding out some sheets containing obsolete matter. The sheets in each case or box should be numbered from 1 up, with rubber stamp, later additions being marked 1a, 2a, etc., so that the wayfaring man need have no difficulty in keeping the sheets arranged. Should the wayfaring man, however, as is quite likely, mix the contents of a box, an assistant can occasionally set things straight.

#### OPINIONS, ETC.

The following views are expressed by some librarians who have as yet no scrap collections:

*Amherst College*.—Sorry to say we have as yet done nothing in this line. I believe in it though, heartily. (W. I. Fletcher.)

*Drexel Institute, Philadelphia, Pa.*—We do not keep scrapbooks in this library; would like to do so if we had time. (Alice B. Kroeger.)

*Harris Institute library, Woonsocket, R. I.*—It seems to me very useful and very desirable in this library. But with only two persons to do all the work, when there is a circulation sometimes of 4,000 a month, it is impossible to find the time. (Anna Metcalf.)

*Jackson (Mich.) public library*.—We do not keep a scrap collection, though I have often felt the desirability of one. (Celia F. Waldo.)

*Osterhout free library, Wilkesbarre, Pa.*—Scrapbooks are among the things I long to have, but have not. I find the need of them very often, but I have no time even to read a big paper, much less cut up and sort out the slips. If I ever do have scrapbooks I think I should arrange in classified envelopes, dating the slips. Should preserve slips on all important subjects. Current legislation is constantly inquired for



and as we have no newspaper reading room, we are sadly deficient in information. When the days are twice as long as now I shall keep a scrap collection. (Hannah P. James.)

*Peoria (Ill.) public library.*—I should think they would be valuable, and I only await information such as you are collecting to make a beginning on some approved plan. (E. S. Willcox.)

*Philadelphia mercantile library.*—I can see great advantages in the plan if they are kept in such a way as to be quickly and surely available. Our staff is not large enough for doing this work. (John Edmands.)

*St. Paul (Minn.) public library.*—I believe in it and hope to do considerable as soon as time will admit. The attendant in charge of our bureau of information has some newspaper clippings, but we have no scrapbook for public use. (Helen J. McCaine.)

*Watkinson library, Hartford, Conn.*—This library does not collect scraps, as we are very short handed. I thoroughly believe in it and would go into it to-morrow if I could. I am inclined to think that the best way of preserving scraps would be in envelops, classified and indexed on each; though not handy when full, or when there are many scraps on a subject, the great advantage of sifting out those which have fully passed their usefulness will overbalance the unhandiness. With the various handbooks and yearbooks gathering up constantly the results, there is nothing drearier than an old scrapbook—the living fastened to the dead.

The future city library must certainly scrap, and every village library should clip all local matter. Local history is best preserved in books, and I find the Mark Twain book very useful. (Frank B. Gay.)

Opinion is generally favorable regarding the utility of scrap collecting. Where it is followed judiciously it supplies a fund of information not elsewhere available.

One of the devices for preserving clippings is the "Index scrap file," manufactured by Rev. H: Crocker, Fairfax, Vt. This consists of a piece of light manila cardboard, 9½ by 10 inches, folded twice, one of the folds being clipped into strips half an inch wide, to which the clippings are to be attached by paste with number of the scrap at margin. When these strips are folded in, the other side is folded over on them, leaving a space on the back of the file for lettering contents. This is a rather ingenious contrivance, and would do very well if handled only by the librarian; if used by the public the narrow strips, to which the clippings are pasted, would be very soon torn off.

The plan of keeping clippings in envelops, lettered and alphabeted by subjects, is a favorite one, and answers very well when there are but few scraps on a subject, but these soon become bulky and crammed if there is rapid growth in a subject, as in "Biography."

In nearly all cases scrapping is done by some of the regular staff; but sometimes assistance is volunteered by people not connected with the library but interested in its welfare and who, having time to spare, are willing to devote some of it to this work.

As the time required for scrapbook making is more expensive than the material used, it seems that much might be done by volunteer aid. In nearly every place where there is a public library there are people who could spare time at intervals to do something, under the direction of the librarian, towards developing a scrap collection. The work of

inspecting papers, marking and clipping, sifting and classifying, pasting and indexing could thus be carried on without drawing very much on the time of the librarian or his assistants, and the volunteers could hardly fail to become more deeply interested in the institution to which they were giving their aid. In the Middlesex Mechanics' Institute at Lowell and at the Lynn public library some outside help is utilized. At Wellesley, Mass., the work was at one time carried on by the college departments.

### INDEXES AND INDEXING.

By W. I. FLETCHER, Librarian of Amherst College.

Three kinds of guides to literature are found necessary in a library—catalogs, bibliographies, and indexes. These are not so distinct but that they overlap and are largely commingled, but they may be properly defined so as to show the due limitations of each.

A catalog deals with books as separate entries and gives a list of them arranged systematically, usually by authors and titles, sometimes by subjects.

A bibliography, properly speaking, is an account of the literature of one definite subject, or in one limited class, the term being most strictly appropriate when applied to a list of the works of a certain author, calculated to exhibit and describe all the editions. The term "national bibliography" is loosely applied, sometimes to a catalog of the books referring to a certain country, more commonly of late to a catalog of all the publications issued in the country. A subject bibliography is an exhibit of all publications on a certain subject, so far as it can be made, generally including pamphlets and articles in periodicals and transactions, its chief value usually lying in the fact that it brings to light stores of otherwise hidden material not exhibited in an ordinary subject catalog. Sometimes a bibliography includes ms. material—as for example the recently issued *Bibliography of the Algonquian Languages*, by J. C. Pilling—which refers to many vocabularies, etc., which exist only in the author's original manuscripts.

An index is an arrangement (generally alphabetic, but sometimes classified) of the analyzed contents of one book, or of the books in a certain class, and is intended to show in what books and at what places in those books information is to be found on a certain subject.

As libraries are used more for reference and study, the need of indexes to literature is more and more felt and supplied. In many library catalogs analytic entries have been so numerous made as to constitute them indexes as well as catalogs. This is notably true of the well-known Brooklyn Peabody Institute and Cleveland catalogs, and of some others.

The finest example in existence of this combination of catalog and index is, however, the index catalog of the library of the Surgeon-General's Office in Washington, of which 13 large volumes have been



issued, bringing the alphabet down to "Sut," and containing references to 71,900 volumes, 127,000 pamphlets, and 424,000 articles in journals, etc.

But as libraries have increasingly done this indexing of books in their catalogs it has become apparent that it is work which might better be done through regular printed indexes available to other libraries as well as to the one where the indexing is done.

When Dr. Poole, while yet a student in Yale College, prepared for use in the library of the literary society of Brothers in Unity, a ms. index to periodicals, he soon saw that it would be equally useful elsewhere. This led to its publication and to its becoming the germ of the great Poole's Index of to-day, elsewhere spoken of as one of the most indispensable of library helps. The publication of Poole's Index and its supplements represent the transfer of the whole field of periodical articles from the cataloging process to that of indexing—i. e., to the printed book useful alike in all libraries.

It has long been evident that another large class of works would be better treated in the same way, namely, collections of essays, papers, and monographs, and the A. L. A. Index was lately published to meet this demand. This index with its supplements and in successive new editions will obviate the necessity of analytic cataloging of this kind of books in individual libraries. Still another class of literature closely allied to that of periodicals requires similar treatment and will doubtless soon receive it—i. e., transactions and memoirs of the learned societies. Much of the most valuable discussion of scientific subjects is locked up in these volumes, waiting for the key which shall unlock them and make them available. Few libraries have undertaken to catalog separately the papers in these publications; all have admitted that an index is the needed key.

The Royal Society of London has issued a catalog of these papers in nine large volumes, which is of great service; but the index by subjects, when it can be made, will be much more useful. And it seems to need only the same energetic cooperation among those interested that was applied to the preparation of Poole's Index to secure the carrying out of this greater and more difficult task. Many other departments of literature, which are now quite imperfectly covered by our library catalogs, await indexing. Poole's Index and the A. L. A. Index are confined to works in the English language. There is great need of an index to the French and German periodicals and books of essays, etc. The admirable "Contents Index" of the University of California library furnishes a hint of what is needed in this direction, and ought to be so issued as to be available to every library.

An index to biographic sketches and especially an index to portraits are also much called for.

It is not the purpose of this paper to tell how indexes should be made. This has been well done by several writers, to whom reference



is made at the end of this article. A few general considerations only will be touched on here. In the first place it may be said that the alphabetic method of arrangement is generally to be preferred to any other. Classified lists of titles always present the serious difficulty of requiring a knowledge of the system in order to use them with any facility, and although the classified arrangement is found advantageous for certain purposes, it is probably becoming more thoroughly agreed among librarians that no other system is so generally useful as the alphabetic.

Another essential point in indexing is that each entry should be made specific. Nothing is more discouraging when attempting to make use of an index than to find a large number of references with a single heading and without specifications to show how one reference may be of more or less value than another for a special purpose.

References should be clear and as free as possible from mere technicalities. Titles of books or papers referred to may be contracted, but it should be done in such a way as to leave it entirely plain what reference is intended without the use of a table or code of marks and symbols.

The work of indexing requires careful and intelligent attention, especially to two things: The real subject of the article or chapter indexed and the best heading to be chosen for it in the index. To do indexing well one ought to read the matter indexed closely enough to understand thoroughly its drift, and not be misled by artificial and fanciful headings or titles. In one volume of a now defunct American periodical an article on the East River bridge is called "Up among the spiders," and the only reference to it in the index of the volume is under "Spiders, Up among the." Having looked at this article enough to learn what its subject really is there remains the other question, What shall this subject be call in the index—Brooklyn bridge; Bridge, East River; or East River bridge? That is, of several names properly or improperly applicable to the same thing, one must be chosen and adhered to, and it should be the one by which the thing is most commonly known; at the same time there must be a consistency in the practice of the index in similar or allied cases. The demand thus put on the maker of an index to understand the subject-matter indexed and also to have such a general acquaintance with the whole field of knowledge that he can avoid inconsistencies and absurdities in the choice and arrangement of headings, indicates that indexing is no mere hack-work, but calls for real scholarship and the exercise of the best gifts of reason and intelligence. In fact, it might well be claimed that a majority of all the indexes now made are examples of "how not to do it," when judged by the high standards thus set. On the assumption that "anybody can make an index," cheap and inexperienced help is often employed, the result being what might be expected, cheap and worthless indexes. In my experience in directing cooperative indexing

it has often been noticed that the indexing work of some quite competent and scholarly men is apt to be imperfectly done for want of the painstaking attention to detail and the good common sense needed for the best results.

As to the mechanical details of index making, some hints may profitably be given. If an index is to be kept in manuscript for some time and constantly added to, there is no other method so good as the card system. Instead of the thick cards used for a permanent card catalog, however, thin slips may be employed, effecting a great saving in the cost of the cards and in the space required for holding them. The great index catalog of the Surgeon-General's library, already referred to, has been so prepared, and it is difficult to see how it could have been done otherwise.

But when a certain amount of indexing is to be done, to be printed immediately, the best method seems to be that of writing the titles on sheets of foolscap paper, cutting them apart, arranging them alphabetically, and then mounting them on large sheets as copy for the printer. This was done in the case of Poole's Index, edition of 1882, involving the cutting up and sorting out of about 200,000 of these single line slips, making 4,500 large sheets for the printer.

The Rudolph indexer will doubtless be found of great service in some of its various forms, especially in keeping up an index which is constantly growing. The linotype also promises to be of value in the same direction, providing a simple means of printing an index of a certain length at one time, and afterwards reprinting it indefinitely with additions inserted alphabetically and without the resetting of type.

When one considers the enormous growth of literature in the last half of the nineteenth century, the conviction grows that no literary work will be of greater importance in the century just before us than indexing. Already one who would read on any subject finds himself confronted with a mass of material beyond his ability to cope with, and is often forced to spend a large share of his reading time in learning just where in the mass is to be found the exact thing he wants. With every year the difficulty increases, and it would soon be insupportable but for the great number of bibliographies and indexes which are now appearing. The American Library Association has done much to promote this work of making existing knowledge available, and may yet do much more through an earnest and generous cooperation. It is greatly to be regretted that for want of this spirit of cooperation excellent indexes and bibliographic works are constantly being issued by individual libraries as part of their own system of catalogs or bulletins, and are thus available to other libraries only so far as they receive them by gift or exchange. Some means should be found of bringing pressure to bear on the libraries which are thus doing good work, but limiting the number of those to whom it is available, so that they may be induced to put the results of their bibliographic labors in

the hands of our publishing section, contributing also to its support a less sum than their separate publication is now costing them, and so putting these valuable aids within reach of all libraries and all individual literary workers.

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NICHOLS, J. BEN. Indexing. *L. j.* 17: 406-19.

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Reference should also be made to the indexes to all the volumes of the Library journal, no one of which is without some contribution to the subject.



## CHAPTER X

### NOTES ON EDUCATION AT THE COLUMBIAN EXHIBITION.

By Hon. JOHN EATON,

Ex-United States Commissioner of Education.

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A final survey of education at the Columbian Exhibition should include not only an examination of the collections as installed, but all that was printed by exhibitors and others leading up to it and following it. This, of course, is impossible. The purposes of a survey may be as varied as those of the millions of the visitors. Shall it aim only or mainly at noting the principles and methods of teaching, tracing them as they appear in different collections? Shall it emphasize the growth of systems and institutions, and note especially failures or successes? Shall it dwell specially on the lessons brought out for teachers, or those brought out for the public? Shall it consider what the exhibitions illustrate of school legislation or laws, or what the influence of private agencies has been? Shall it gather up the lessons offered in the way of illustrating the influence of such exhibitions, or the mistakes in preparation or installation with a view to their avoidance in future? Only notes can be attempted. Education in the classification was included in the Department of Liberal Arts. Its collections were located in the main in the gallery of the great building devoted to that department. It was in the charge of Selim H. Peabody, LL. D., who had won the confidence of educators by his ability, fairness, fidelity, and attainments as an educator in various places of trial, but especially as president of the University of Illinois. It should be kept in mind that he was not carrying out his own plans, but those of the management over him. The failure of the management to appreciate the importance of the exhibit of education was early manifest, and its unfavorable effect should be kept in mind in forming any opinion of the exhibit. They did not understand that in no other way than through the schools of the country could the interest in these plans become so universal. Their hesitancy in granting adequate space promptly had a discouraging effect upon those who would exhibit either from our own or other countries. In the comparisons suggested by the numerous exhibitions, great as are their possible advantages, there is much need of caution. Are all the conditions taken into account? No doubt great benefit would arise if teachers in schools and professors in colleges studied more each others' work. Just now

an eminent gentleman who comes from an English to an American university as professor, gives us an interesting comparison between the two classes of students. He concludes that the average American undergraduate takes a more comprehensive view of history, has a better grasp of its essential facts, and surpasses his English cousin of corresponding grade in power of generalization; but the American student is lamentably deficient in his knowledge of details, and also writes very poor English. The professor thought the essays written by his undergraduate American student were on the whole better than similar English essays, although he sharply criticised the spelling, grammar, and generally careless style of the Americans. When, however, he set his American students an examination of twenty questions concerning dates and places, he was overwhelmed by the lack of knowledge of facts displayed in the answers. More than half the class failed to pass the examination, the average percentage being about forty, and, as a rule, the students who wrote the best essays handed in the poorest examination papers. Another from a different point of view might reach opposite conclusions, so divers are the stand-points of observation or the standards of measurement. Indeed, however useful these comparisons may be it is easy to press them too far whatever the data on which they are predicated, whether on actual class work in progress under the eye, or its results as gathered at Chicago.

The amount of space given to different systems and institutions or features of education in these notes in no sense indicates the writer's opinion of any one of these systems, institutions, or topics. The circumstances surrounding the work have compelled the doing of it in fragments. The extent of any notice depends upon the time at command for the examination, or the data at hand, or the opportunity possible at the time of writing to dwell upon a given topic. Naturally these notes include illustrations of education exhibited which may not be included in any system of public instruction. My indebtedness to the many who have aided me is heartily acknowledged. I am specially indebted to J. H. McGibbons, chief clerk of the Department L, Bureau of Awards.<sup>1</sup>

## I.—UNITED STATES EXHIBITS.

### MAINE.

One was disappointed in examining the education exhibit of Maine who was familiar with the colleges of the State—Bowdoin, Bates, Colby, and Orono—and the normal schools at Gorham, Castine, and Farmington, and the different academies of excellence; the well-taught high schools and the well-known excellencies of the elementary schools in various parts of the State, and the ability and attainment of a large

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<sup>1</sup> These notes were first prepared for separate publication and have been specially modified by omissions for insertion here.



body of its teachers. Some of the old academies, such as Brighton, took an interest in the exhibit. From collections from the Farmington normal school there could be learned something of the educational training furnished those who attend the normal schools of the State.

The pictures and specimens of students' work, exhibited by the College of Agriculture, gave evidence of the good opportunities there afforded in letters and in manual training and of the extent to which they are improved by the youth in attendance.

There were articles from the schools of Rockland, Richmond, Lewiston, Gardiner, and Bangor, giving proof that the best principles and methods are employed by teachers and improved by pupils. But the uncertainty about space and the lack of means were deeply felt; and the exhibit, in spite of its points of excellence, as recognized by the board of judges, failed to do justice to the educational opportunities in the State, alike in the information furnished visitors and the collections presented for their examination. Those who were so fortunate as to obtain a Maine souvenir gained much valuable information of its summer resorts and of the attractions of the college at Orono, and those into whose hands the Maine register fell could post themselves in regard to almost any subject of interest in the State.

That those directing the educational affairs of the State were not indifferent to the event which the Chicago Exhibition celebrated, and that it was not allowed to pass without a measure of advantage to the youth of the State, in addition to what was made manifest at Chicago, is further evidenced by the following extract from the report of Hon. N. A. Luce, State superintendent of common schools:

On the observance of Columbian Day [he remarked] perhaps no more notable event in the history of our country has occurred than the almost universal celebration, by the schools, of the four hundredth anniversary of the discovery of the New World. That the millions of children enrolled in our public schools could be brought to engage simultaneously in a uniform observance, by patriotic ceremonies, of that notable event, was an idea almost sublime in conception. And the event was worthy of the conception. The gathering of the children in holiday attire at tens of thousands of schoolhouses; the salutes by those children to tens of thousands of flags floating above those schoolhouses; the vows of devotion reverently taken with upraised hands to that starry emblem and all that it symbolizes; the inspiration of patriotic song and recital of the nation's glorious past and present, all combined to form a spectacle such as the world has never before witnessed, and which can hardly have failed to plant the seeds of a deep and fervent love of country in the minds of those who were actors in or observers of that spectacle.

In these observances the schools of Maine were not far behind those of other States. Unfortunately the time fell when only a part of our schools were in session. Few of those which were in session, however, failed to give fit observance to the event, either independently or in connection with others. Judging from the programmes of exercises, prepared by the committee of the national department of superintendents having the matter in charge, which were distributed to schools calling for them, the children in nearly or quite two thousand different schools participated in those exercises. Probably more than one hundred thousand of the children of Maine on that 21st day of October took the oath of fealty to the national flag and of loyalty to country.



## NEW HAMPSHIRE.

There was no one continuously charged with the care of this exhibit. Hon. E. M. Shaw, commissioner for the State, said:

The educational exhibit was not fairly representative of the State, as many cities and towns from which much might have been expected failed to participate. During the months when these exhibits should have been prepared no space in the Liberal Arts Building had been assigned to New Hampshire, nor was it certain that any would be. This uncertainty occasioned delay, and finally a lethargy and lack of interest which proved to be fatal.

The scientific department of Dartmouth College, under Professor Ruggles, made a fine showing of drawings, and the chemical department, under Professor Bartlett, made a limited, but very valuable, exhibit of students' laboratory work.

Several of the higher educational institutions were represented by photographs, and some cities and towns made partial exhibits of work and showed photographs of school buildings. The village schools of Littleton were completely and carefully represented by mounted drawings and a portfolio of primary work, bound volumes of work in language and map drawing, a display of pupils' work in written papers, and an excellent and extensive herbarium. The only cities fully represented were Nashua, Dover, and Portsmouth. All these presented comprehensive exhibits of drawings, mounted and bound, and of pupils' written work, and some made exhibits of clay modeling. A distinctive feature of the Dover exhibit was a fine set of relief maps made by pupils. Portsmouth made a large and creditable exhibit of needlework, and Nashua a fine display of work in language and literature, in many cases illustrated, and in all tastefully arranged. The Catholic schools of the Manchester diocese also made a magnificent exhibit.

The exhibit from the State normal and training school was large and comprehensive. On wing frames and on the walls was displayed the work of pupils of the training school, in drawing, color, etc., from the kindergarten through the high school, and from all classes in the normal school. The normal school comprised the range of work in drawing which its pupils are trained to teach through the various grades of the training school, and a complete course of charcoal work from models. There were several frames of photograph of exterior and interior views of the school buildings, and of pupils' work in clay modeling. The written work of pupils was bound in volumes, showing the course and methods of instruction in the various branches of study throughout the training and normal school courses, and also illustrating by papers and by plans of lessons the methods of professional instruction and training in teaching adopted in the normal school. The training school referred to as a part of the normal school system consists of the schools of the village of Plymouth, where the normal school is located, from the kindergarten to the high school. These schools are under the direct management of the institution. This peculiar and exceedingly

valuable feature of the New Hampshire system enables the pupils of the normal school to become proficient in teaching by daily practical experience in what is called the training school, under the direct eye of the principal. The principles of teaching taught in the normal school are here practically illustrated and enforced. This normal school has made excellent progress under its able principal, Prof. C. C. Rounds, Ph. D., who is especially accomplished both in the theory and practice of teaching. The award prepared by the individual judge, Hon. Josiah H. Shinn, State superintendent of instruction for Arkansas, and approved by the board of judges is very discriminating and just.

#### AWARD.

Development of teachers by practice with pupils, guided by competent instruction regularly given.

Persistent efforts to put the spirit of true science teaching into the schools of the country, through pupils trained to this end.

The union of kindergarten with primary work; model language forms and moral teaching.

General excellence in original plan of practice school, conscientious devotion to truth, and diligent effort at proper teaching in color, form, shading, construction, decoration, design, and models; marked efficiency of the teacher-pupils who adhere to its work.

One studying this exhibit, and familiar with education in the State, could not fail to render a hearty tribute of praise to the great ability and services of Hon. James Willis Patterson, LL. D., so long State superintendent of public instruction. Other States attempting similar steps of progress failed and New Hampshire went steadily forward. This was especially due to his efforts and the confidence the people had in his leadership.

A word should be added both in regard to the State normal school and Dartmouth College. The normal school was authorized by act of the legislature passed in 1870. For this Dr. Hiram Orcutt deserves much credit as a member of the legislature. It was located at Plymouth, and began its first term March 15, 1871. The legislatures of 1887 and 1889 made liberal appropriations for new buildings, and in the year 1891 a schoolhouse and boarding hall were erected. The school first occupied these in September, 1892. In the twenty-four years of its existence the total number of different pupils has been 1,870, and 477 have graduated from its courses of study.

Plymouth is near the center of New Hampshire, in the beautiful valley of the Pemigewasset, 25 miles south of the Profile and Franconia Notch. It is on the Concord and Montreal Railroad, at its junction with the Pemigewasset Valley Railroad, 51 miles north of Concord and 126 miles from Boston.

Dartmouth College, located on the Connecticut River, in Hanover, N. H., and reached via Norwich, a station on the Vermont Central Railroad, is the outgrowth of a school which Eleazar Wheelock opened



in his home at Lebanon, Conn., December 18, 1754, for the Christian education of Indian boys. The school, however, was known as Moor's Indian Charity School, so named from Joshua Moor, who in the following year contributed a house and 2 acres of land. In 1764 30 scholars were in attendance, of whom about one-half were English students preparing to serve as missionaries to the Indians.

Funds for the maintenance of the school were received from various sources—from private individuals, from the general courts of Massachusetts Bay and of New Hampshire, but chiefly from Great Britain, where the enterprise had awakened the greatest interest. Through the agency largely of Samson Occom, the Indian preacher who made the tour of England and Scotland in 1765, the sum of £10,000 was raised, and committed to the charge of a board of trustees, with the Earl of Dartmouth at its head. As the result of this endowment it was determined by Dr. Wheelock to enlarge the purpose of the school, especially to reach "a greater proportion of English youth," and to change its location. Various proposals for a site were made, but after careful investigation the site chosen was the township of Hanover, in the region of Cowas or Coós, in the province of New Hampshire. Apart from the nearness of this site to the Canadian Indians, the determining reason for the choice seems to have been the attractiveness of the location, and the fact that it was the natural center of "more than two hundred towns chartered, settled, or about to be settled." Removal to the province of New Hampshire also gave the assurance of a charter, which it had thus far been difficult to obtain.

The charter was given by Governor John Wentworth in the name of King George III, and bore the date of December 13, 1769. A draft of the charter submitted by Wheelock received important modifications from the governor. In particular he rejected the suggestion of a coordinate board of trustees in Great Britain. He gave to the college the name of Lord Dartmouth, its most active patron in Great Britain, although Wheelock had proposed to the governor to call it by the name of Wentworth; and instead of incorporating it as a "school" or "academy" he adopted a hint from Wheelock's postscript and made it a "college." The first board of trustees consisted of the governor with three of his council, the speaker of the New Hampshire house of representatives, one member of the Connecticut colonial government, and six Connecticut clergymen selected by Dr. Wheelock.

Dr. Wheelock was elected president of the college, with Mr. Bezaleel Woodward, a graduate of Yale in 1764, as his associate. The first class of four students was graduated in 1771, the commencement being attended by the governor of the province of New Hampshire and a company of gentlemen from Portsmouth, who made their way in part through almost trackless forests.

The school which Dr. Wheelock had brought with him from Lebanon, Conn., consisting of 18 whites and 6 Indians, was put into the charge



of Mr. David McClure. It was made an independent institution, with a separate charter, to be known as Moor's School. This school was maintained as late as 1849. It still retains its charter, has a board of trustees, and holds a small endowment.

Two events in the early history of the college materially affected its character and growth. First, the gradual withdrawal of the support of its patrons in Great Britain, especially during the Revolutionary war; second, the lawsuit between the college and the State of New Hampshire for the control of the college, which resulted in a final decision by the Supreme Court of the United States in favor of the trustees of Dartmouth College. The decision was rendered in February, 1819. Since the reestablishment of the college by this decision, its history has followed the general course of educational progress in New England.

Other institutions have from time to time been associated with or incorporated into the college.

The Dartmouth Medical College dates from the establishment in 1798 of a professorship of medicine in the college, first filled by Dr. Nathan Smith, who was instrumental in its establishment. The college is under the general control of the trustees of Dartmouth College, by which body degrees are conferred, but the management of its affairs is committed to the medical faculty. Associated with the medical college is the Mary Hitchcock Hospital established in 1893, the memorial gift of Hiram Hitchcock, esq., of Hanover.

The Chandler School of Science and the Arts, established in 1851 by a resolution of the trustees, in acceptance of a sum bequeathed to them in trust by Abiel Chandler, esq., "for the establishment and support of a permanent department or school of instruction in the college in the practical and useful arts of life," was more formally incorporated into the college by the joint action of the trustees of the college and the visitors of the Chandler School in 1893, and is now known as the Chandler scientific course in the college, leading up to the degree of B. S.

In 1866 the New Hampshire College of Agriculture and the Mechanic Arts was established by an act of the legislature, on the basis of the Congressional land grant, authorizing its location in Hanover in connection with Dartmouth College. Its board of trustees was appointed partly by the governor and council and partly by the corporation of Dartmouth College. In 1892 this arrangement between the State and Dartmouth College was discontinued, and the New Hampshire College of Agriculture and the Mechanic Arts was removed to Durham. The buildings and land which had been occupied by it became the property of Dartmouth College through the grant of the State or by purchase.

The Thayer School of Civil Engineering, established in 1867 by the bequest of Gen. Sylvanus Thayer, is essentially a graduate school, covering a course of two years, and conferring the degree of civil engineer.

The funds of the school are in charge of the trustees of the college. but its affairs are managed by a board of overseers, which is a close corporation.

The presidency of the college has been held as follows: Eleazar Wheelock, 1769-1779; John Wheelock, 1779-1815; Francis Brown, 1815-1820; Daniel Dana, 1820-1821; Bennett Tyler, 1821-1828; Nathan Lord, 1828-1863; Asa Dodge Smith, 1863-1877; Samuel Colcord Bartlett, 1877-1892; William Jewett Tucker, 1893 to date.

#### MASSACHUSETTS.

The public school exhibit of the State of Massachusetts was complete in the sense that it exhibited work of every kind done in the public and normal schools of the State from the crude attempts of the little children in the kindergartens to the fine art display of the normal art school; from the first beginnings of scholastic education in the primary grades to the work of the pupils just taking their college examinations; every phase of school life was shown. The exhibit was incomplete in the sense that it did not represent the work of the entire State. Of the 252 cities and towns, only 40 sent work which gives a picture of the school system in operation, and many of these exhibits show only partially the work that is done. This fact is offset, however, by the fact that cities and towns of every size, and schools of every grade and character are shown, so that while the picture is not complete it is true and satisfactory.

The collection shown, by the board of education gives a good ideal view of the work which this dignified body does, and the character of the school system of the State of Massachusetts. The distinctive feature of this system is the control of the public schools by the local committees so far as the choice of teachers, methods of teaching, and courses of study are concerned. Under the law local committees are supreme, and from this fact arises the greatest possible diversity in subjects and methods of study. The system has its disadvantages, which are apparent wherever the system is contrasted with that of States having a State course of study with a strong central authority. Committees and teachers are continually making experiments along lines that have been proved to lead to no good result by many former experiments. Pupils moving from one city or town to another are placed at a great disadvantage because of the different studies pursued in different places. On the other hand, the advantages of this system are seen in the wonderful activity of teachers and school officials, in the multitude of original investigations which are made in every portion of the State, in the emulation which exists between the different communities, and in the constant effort to secure for the local organization all that is best in modern appliances and modern methods. The exhibit of the board showed a complete series of its annual reports from 1838 to 1892. These reports are much more than tabulated statements of



attendance and expenditures in an extensive public school system. They form a history of education in this country, so far as progress has been made in subjects of study and methods of instruction; the great questions of organization and discipline, of the means and ends of public school education are here discussed by the foremost thinkers of the day, and are universally acknowledged to be of the greatest value.

A series of maps gives the location of the training schools and classes maintained by the various cities and towns throughout the State to supplement the normal school instruction; the places at which teachers' institutes have been held during three successive years; expenses incurred by the various cities and towns in the transportation of pupils to and from school; and giving the location of cities and towns which have local superintendence. Incidentally the last map exhibits the extent to which the system of local superintendence has reached, and prophesies that within a few years the entire teaching force of the State will be under the direction of skilled local superintendents; statistics of attendance and expenditure; of the preparation of teachers for their work; of teachers of the different sexes; of comparative wages; the attendance in evening schools; the increasing expenditure for public schools; the average membership in public schools; important dates in the history of the public school system and the extent of supervision; text-books and supplies; and conveying pupils to and from school are shown in a series of charts in a graphic and forcible manner. Two large portfolios contain the administrative forms used by the school committees and school superintendents throughout the State, and form a suggestive and helpful exhibition of the fertility of the minds of school authorities, the care and time devoted to securing the best possible execution of the laws and rules governing the schools of the State. A large map shows, as well as a map can show, the location of the common schools of the State. Its one distinctive lesson is that every portion of the State is covered with schoolhouses, and that every child who is in its borders may receive at least the elements of a good education. Another chart shows the location and number of free libraries in the State; its principal lesson lies in the fact that 97 per cent of the population of the State have access to a free public library within the limits of their own municipality.

Pamphlets for public distribution give a detailed account of the system and its principal historic features. Among them all public statutes of the State relating to public instruction, with annotations and explanations; an historical sketch of the growth of the Massachusetts public school system; a descriptive sketch of its salient features; a descriptive sketch of teachers' training schools and classes; an account of the recent movement to promote nature study; an account of the movement to provide free transportation for pupils when it is advisable to discontinue rural schools; historical account of the instruction in



drawing, and of music; a report of the free library commission of the State; copies of the course of study recommended for use in the common schools of the State; historical account of the normal schools.

Closely connected with the exhibit of the board of education is the exhibit of the State normal schools. This exhibit shows by a series of photographs the means of instruction provided in the five normal schools of the State; by specimens of the pupils' work it shows the character of the work secured, and by charts and other methods it shows the courses of study pursued and the methods of instruction adopted. The normal schools of the State of Massachusetts are organized upon the following plan: The work of the school is twofold: (1) Purely professional instruction, namely, instruction in educational psychology, in the principles of education, in the best methods of instruction and their historical development; (2) in the presentation and study of various branches of human learning with a view to ascertaining the best methods of teaching these branches—that is, various branches of study pursued in the public schools are reviewed and studied in the normal schools, but always with the purpose of ascertaining the best method of presenting these studies to pupils, the normal pupils thereby acquiring a fresh knowledge of the subjects investigated, together with a knowledge of good methods of teaching the branches. All but one of these schools provide opportunities for pupils to put into practice the principles and methods which they learn in their studies, the practice school forming an important and essential portion of the normal school. They do not go to the extent of the famous Cook County Normal School in making the practice school the center of observation and inference for the entire work of the school.

Of the various cities and towns contributing to the exhibit, Boston is by far the most prominent. It shows work of every character done in the public schools of the city, over a hundred different subjects in all being illustrated, and gives work from every schoolroom and laboratory in the city. Immense portfolios, huge volumes, and large walls are devoted to this display. Photographs alone occupy twenty-five large albums, and give a truthful representation of the means of instruction afforded by this city. All the usual subjects of instruction are illustrated fully, and so related to the course of study and accompanied by such full explanations of the methods of instruction and the conditions under which the work of the pupils was done that one is able to study the exhibit with ease and satisfaction. The display in drawing covers the entire field, from Mrs. Cutler's course in primary form and color work to the elaborate work of the evening drawing schools. The drawing display shown is of greatest merit. The model drawings and designs from the high schools are also remarkably fine. The illustrations in the volumes of pupils' work are full and excellent in books devoted to scientific studies, especially in the high school department; but the ordinary work for the grammar and primary grades does not contain

the same kind of illustration that appears in the work of some of the schools in other cities of the State. The exhibit in the various departments of manual training in Boston is very full, and is excellent in every particular. Photographs show clearly the conditions under which this work is done, and the illustrative work of pupils shows the courses of study and the character of the work secured. In sewing the entire course of study is shown by numerous examples of pupils' work. In large albums and in a number of show cases are completed garments. Photographs show the pupils at work, with entire classes dressed in clothing which they have made with their own hands. The work in sewing is developed in general along sloyd principles—that is, every process taught is applied at once in the making of some completed article. In woodwork there are three systems now in use in the Boston grammar schools—the so-called Eliot school course, as arranged by Mr. Leavitt; the course in sloyd, as arranged by Mr. Larssen, and the course arranged by Mr. Eddy. The work in each of these three exhibits shows careful thought and experiment on the part of the promoters, and the fact that the three courses are in use side by side indicates the determination of the city to solve by long-continued experiment the problem of the best form of manual training for common schools. What the outcome will be is uncertain. I am inclined to the opinion that the course of Mr. Larssen, either in its present form or in some modified form, is likely to become a standard system for the schools of lower grade. Whether the principles of sloyd can be properly carried to schools of higher grades is an open question, as is also the general question of what models to employ.

Some of the special exhibits of the city may be briefly mentioned as follows: Work in kindergarten is characterized by the delicacy of color employed in the materials used by children, and the wonderful perfection of the children's work. Clay modeling is of a high degree of excellence. The work in the English language, from the lowest primary to the last year in the high school, is of exceptional interest and importance because of the success attained in the teaching of this important branch. The exhibit shows that Boston's reputation in this direction is well founded, and the prefaces of the teachers explaining their methods of teaching form a treatise of remarkable value. The character of the penmanship in this exhibit is similar to that in most cities. The form of the letters used in copies is that known as the Spencerian style. There is an absence of shading, and the effect in the best specimens is pleasant to the eye, and the work is legible when the ink is of good quality. On the other hand, it is evidently written with great painstaking and very slowly, and the problem of beautiful, legible, rapid handwriting seems not to have been generally solved throughout the city. Perhaps most should begin the use of the pen earlier in the course.



The distinguishing characteristic of the Boston drawing is the large number of original designs. The division of elementary drawing, which has now become common throughout Massachusetts, namely, mechanical, decorative, and illustrative, seems not to be carried on with unison throughout the entire grammar course. One of the results of this exposition will be to secure, on the part of the drawing teachers in all parts of the country, greater attention to pictorial drawing; but this should not be used to the exclusion of design and geometrical drawing; the three should go hand in hand.

A relief map of North America, which had been made from a newspaper soaked in warm water, is the best relief map in the exhibit. The work in relief maps in the public schools should be made in all cases as correct as possible in point of elevation and borders. In the production of these maps contour maps should be used as far as possible, and the methods adopted by professional makers of relief maps is probably the best. One large and accurate and beautiful map, of which all the pupils in the room have had a hand in the making, will prove of much greater value than many batches in putty and pulp made by individual pupils, and ending in nothing better. It would be well if a good relief map of the State could be placed in every schoolroom in each State. Wherever possible, pupils in the room should make the map from the contour maps published by the Government. Where this is impracticable, the city or State should furnish a good map of this character. From this may be taught, better than from any other source, a host of facts pertaining to the drainage of the State, the character of its productions, the varieties of its climate, and the historical development of its manufactures and commerce. An interesting map showing these facts was to be seen in the Russian section.

The exhibit of the normal school of the city of Boston shows very fully the character of the work done in this institution. The school has an honorable history, and it has had a great influence in maintaining and improving the character of instruction in the schools of the city.

From the girls' high school comes a volume of rare value, a description of the art collections of this school, and a catalogue of its libraries.

From the Horace Mann School for the Deaf are papers in geography, history, arithmetic, physiology, and English that would do credit to pupils whose senses are all in a normal state, with sloyd work of a very high degree of excellence.

The views of the Mechanic Arts High School, just opened in Boston, show the accommodations which Boston has prepared for a manual training high school. A remarkable fact connected with this high school is the number of pupils who have applied for admission at its opening session. Nearly as many pupils have applied for admission to its lowest class as the entire building is capable of accommodating.



The result is that the city has at once made preparations for building an additional school of the same character.

A military organization is maintained by its high schools. The boys of the various high schools form one regiment, commanded by officers selected from their number. Each of the schools is organized as a battalion with several companies, varying according to the number of students. This military organization has been maintained for a long time and is popular with the pupils and with the community. The instruction in military science is in the hands of a special director who devotes his entire time to the work.

The five school papers published by five of the high schools form an interesting portion of the Boston exhibit. These papers are published and edited by the pupils of the various schools and reflect credit upon their managers.

It is specially interesting to note in connection with public instruction in Boston:

(1) That the city holds itself under solemn obligation to provide for every boy and girl of school age educational facilities, including every known pedagogical aid and convenience.

(2) It holds the education of every child obligatory. Years ago Hon. John D. Philbrick, the eminent superintendent of public instruction, under whom the schools rose to their great excellence, said that not over one child in a hundred of school age could be found uninstructed.

(3) Added to the general excellence of its elementary schools is manual training, beginning with the kindergarten and reaching by means of clay modeling, sewing, and woodwork all the pupils of this grade.

(4) Its system of physical culture, carefully supervised by experts, extending through all grades and reaching every pupil.

(5) Its system of evening schools crowned with a high school.

(6) Its system of day high school instruction, numbering ten schools. A very competent judge, after careful study of their work, places them in the following order:

- |                  |                       |                     |
|------------------|-----------------------|---------------------|
| 1. Girls' high.  | 5. Girls' Latin.      | 9. Dorchester high. |
| 2. English high. | 6. Charlestown high.  | 10. Brighton high.  |
| 3. Roxbury high. | 7. West Roxbury high. |                     |
| 4. Boys' Latin.  | 8. East Boston high.  |                     |

And grammar schools:

- |               |              |              |
|---------------|--------------|--------------|
| 1. Everett.   | 5. Gaston.   | 9. Warren.   |
| 2. Shurtleff. | 6. Mather.   | 10. Hancock. |
| 3. Dwight.    | 7. Prince.   |              |
| 4. Putnam.    | 8. Dillaway. |              |

Here every child in the city, boy or girl, who will, is invited to a measurably liberal education, gauged by former standards, or to an ample preparation for admission to college. What a power for the assurance of the intelligence, good order, and prosperity of the city!

(7) The sacred devotion of public moneys to public school instruction.

(8) The extent to which the public school administration has been kept free from partisanship either in politics or religion.

Next in importance to the exhibit from Boston stands the exhibit of the city of Springfield. This exhibit does not aim to give a complete picture of the school work in the city. It rather aims to show the lines of work to which the school authorities have given special attention in recent years. In a general way, these subjects are arithmetic, drawing, manual training, music, and writing. The work in arithmetic is unique in various particulars. Perhaps it may be best characterized by saying that in the lower grades it is based upon form study and elementary geometry. It is closely coordinated with drawing and with English. According to this plan, mensuration begins in the lowest grades and is continued through the entire course. The area of surfaces and the contents of solids are discussed and measured in grades several years lower than is the custom in other cities. All the work in arithmetic is very full and carefully illustrated, and no portion of the Massachusetts exhibit has been more carefully studied than this. It gives evidence of most careful thought and experiment, and some of the results exhibited are surprising.

Drawing is shown by two collections of charts giving an epitome of the course, and by large portfolios giving many examples from the work of pupils in all grades. These are systematically arranged and afford excellent opportunity to study the course as outlined by the director in drawing. A special feature of the work is the excellence of the object drawing. Another important feature is its correlation to the work in the high school. For example, an important portion of the high school drawing consists in illustration of the work done in biology, physics, and chemistry. The drawing of the lower grades looks forward to this and prepares for it. The high school drawing is shown only in application to science work, and these applications have very high merit. A feature of this work which has attracted very marked attention is the color work in botany and zoology. This work is done in water colors, and is of such excellence that it could well be used as charts for instruction in these branches in the lower grades of school.

Springfield furnishes the only exhibit in music which has any prominence in the Massachusetts department. This exhibit consists of the written exercises of the pupils, from dictation, written examinations in music, and music written to express what the pupils have heard sung or played. The teacher sings or plays in the presence of the pupils, and they write to the music which they hear. This exhibit has received a good deal of attention.

The work in manual training includes work for every grade from the kindergarten to the last year of the high school. It consists of work in paper, clay, wood, and iron, and the scheme is so arranged as to form a connected whole. The paper modeling and clay modeling are closely

connected with the work in drawing. The work in paper folding and other kindergarten exercises is followed by simple wood carving and other forms of knife work. This alludes to the two Messrs. Kilbon's well-known course in manual training in wood and iron. This work is shown in large frames by carefully numbered models and the proper explanatory legends. The Kilbon course, as is well known, is neither sloyd nor the usual Russian forms of manual training. It is, however, remarkably systematic, and the results secured under his efficient instruction are such as to commend his system.

The work in penmanship in the Springfield public schools is better than that of any other exhibit from the State of Massachusetts. This is owing in a great degree to the instruction given by the supervisor in writing, Miss Hill. The letters are of the usual Spencerian form, and shading is taught from the first. Instruction in form is combined with a great variety of exercises—movement exercises. These exercises are an important part of the work and a very striking feature of the exhibit. The results show a style of handwriting which is not different in character from that which is taught in business schools, and the excellence of which is acknowledged. The selected specimens of high school pupils' work show a degree of facility in pen work which it is difficult to excel. The high school exhibit is confined principally to work in science.

The exhibit from the Springfield training school shows the course of study and methods of training employed in this school. Its efficiency is due in a great degree to the skill and devotion of its principal, Miss Read, and the volume is a satisfactory exhibit of the work done in this respect.

Brookline furnishes a small but accurate picture of the work done in the public schools of this remarkable town. The conditions for school work are here very favorable. The town is so wealthy that it can devote to its public schools a large sum of money without taxing itself to the same extent that other communities must do to secure a meager sum for schools. As a result, a great amount of money has been spent during the last decade in the building and furnishing of schoolhouses and in securing the best available superintendent and teachers. The first characteristic which strikes one in examining the Brookline work is its wonderful extent. A list of subjects taught to pupils of the common school age includes all the ordinary school branches, and drawing, English literature, zoology, botany, domestic economy, sewing, and work in wood and iron, mineralogy, physics, and chemistry. The appliances for teaching these subjects are complete in every particular. Workshops, kitchens, and sewing rooms are provided freely, and no effort is spared to make the work of the school life a complete epitome of all that a child should learn, as well as a means of training mind and body to a high degree of excellence. The work shown illustrates all the features of this very comprehensive system. Photo-



graphs give pictures of schoolhouses, schoolrooms, and school appliances; notable among the last are the art treasures contributed by Mr. William H. Lincoln, for many years a most efficient member of the school committee. The written work of pupils covers nearly all the subjects contained in the course of study. Some of the work which has received the most attention is that in domestic economy, in the natural sciences, and in sewing. It seems strange at least to read in the ordinary school work of grammar school children how to dust a room, how to sweep a floor, and how to wash a sink; but who shall say that it is not as important information as how many cities there are upon the Erie Canal, or how long the river Lena is? Another remarkable book is the one devoted to sewing. Here the pupil writes clearly a description of what she proposes to do, illustrates her composition with appropriate drawing, and then does the work which she has described. This work is attached to the composition, and so this three-fold representation is exhibited as a whole.

Brookline is one of the few places in Massachusetts which furnishes free public kindergartens, and the work of these kindergartens is shown in frames upon the wall and in a portfolio. It consists of the usual work of kindergartens, paper-folding, weaving, etc., and a few special exercises designed for wall decoration, on special days. There are also shown several cases or collections of natural objects made by the pupils and the teachers, and designed to illustrate the work in geography and natural history. These cases have given rise to the suggestion that printers' type cases are well adapted to collections of this character.

Chelsea shows drawing and work in English for primary and grammar schools, together with high school work in nearly all branches taught in New England high schools. The work in English is distinguished by several peculiarities; the most prominent of these is the exhibition of the superintendent's method of teaching reading, known as the thought method. It would seem to be impossible to show the results except by statements as to the ability with which the pupils begin within a given time to read at sight. By a series of photographs of classes and printed explanations beneath them, he shows very satisfactorily the steps in his method. Some of the prominent features of this system are (1) the thought always precedes the expression; (2) all reading from printed text-books is sight reading; (3) in reading the pupil looks at his paper and not at his book, and the exercises resemble a conversation lesson more than an ordinary reading lesson. This exhibit has attracted a good deal of attention from educators in all parts of the country and from foreign countries.

A characteristic of the grammar-school work in English is the large amount of memorizing literature gems. It is clear that this exercise is a pleasant one for the pupils, and its results must be beneficial to their vocabulary and forms of expression. The course in drawing is

shown in full and conforms in general to the outline of the State course. The work shown is good.

A distinguishing feature of the work from the high school is the written translations of Greek and Latin read in preparation for college. Every pupil, it seems, is required as a part of his work to make complete written translations of all the Greek and Latin which he reads. The wisdom of this course is at least doubtful.

Holyoke makes no general display of its work, but exhibits some of its features in a highly attractive way. The drawing is excellent, particularly the model and object drawing and historical object ornament from pupils of the high school. Its work in penmanship is excellent in character and shows the most careful training in this branch of study. A volume of manuscript written and illustrated by pupils in the public schools is a work of great excellence, and has attracted much attention. Holyoke furnishes a good number of relief maps made from putty and from pulp. These are painted to show elevations, and are suggestive of possibilities in this sort of work which are not often secured. One volume gives the record of the history and the course of study in the normal training school of the city. This school is considered by many observers to be one of the best of its kind in the State. A series of historical charts prepared by pupils of one of the grammar schools to illustrate history is unique in character and of value to teachers who examine it.

Malden furnishes two bound volumes of high school work and a case of chemical products from the high school laboratory. The volume on physics gives the method of instruction pursued in this study, and sufficient pupils' work to indicate its general character. The method of instruction is adapted to the conditions under which it is given and the results are very satisfactory. Some of the illustrated drawings are unusually well executed. The work in chemistry likewise has great value. Original laboratory note-books in the solution of chemical problems and the determination of unknowns in qualitative analysis are of excellent character. The organization and plan of work in the normal training school of this city is also shown. A pamphlet by the superintendent of schools shows the method of promotion employed in this city, whereby rapid promotion of bright pupils is easy. This method is believed to be unique and very successful in practice.

Medford shows English, botany, drawing, and modern languages from its high school. All the work is good and some of it is excellent. An herbarium of native wild flowers, scientifically arranged, forms a prominent portion of this exhibit.

Pittsfield shows drawings of all grades and of excellent character. A bound volume of language work in the grammar grades, a case of construction in clay and paper, and a very elaborate and artistic herbarium of native flowers. The method of mounting and the excellence of this work have attracted a good deal of attention.



Quincy shows her drawing, construction work, and the usual studies of primary, grammar, and high school. The work of this city has been much sought after by visitors on account of the reputation of so-called "Quincy methods." These methods have, however, been so much modified as to differ essentially from the original methods which took this title under the direction of Colonel Parker. The methods now used in the city do not in general differ from those used in other cities of Massachusetts, wherever under the direction of skillful superintendents. The work, however, is excellent in every line and worthy of the study which it has received. This is particularly true in the nature study which has been exhibited very fully and in some particulars more completely than that of any other city. In this city we find nature work has been more carefully elaborated and systematized and put upon a more scientific basis than in most of the cities and towns of the State. The drawing of Quincy is also notable. It forms a large part of the State course as illustrated upon the walls of the Massachusetts exhibit, and fills several large portfolios, besides occupying a large portion of one of the winged frames. The work is carefully graded and well executed.

Salem furnishes thirty volumes of pupils' exercises, elegantly bound in half calf. These volumes are in general of two kinds; one kind contains annual examinations, the other contains illustrative lessons. The work of Salem differs from most of that shown in the Massachusetts exhibit, in the fact that it shows the work of entire classes alone, no selected work having been sent. This of course detracts from the appearance of the volumes, while it adds to their interest. On the whole they give an admirable picture of the work being done in a New England city which has clung to old methods of instruction for many years and which is gradually making progress on modern lines under the direction of Prof. William A. Mowry, the energetic and philosophic superintendent. A remarkable volume is entitled *An Historic Album*. This album consists of a very large number of photographs of objects of interest, both local and historical. Salem abounds in these objects, and the pictures have, therefore, great interest and historic value. These photographs have been taken and finished by pupils in the Salem high school. With each photograph is a descriptive essay, written by some pupil in the high school and copied by means of a typewriter. These descriptions show patient research and good ability and a good degree of power in idiomatic and picturesque English. It has been said that, on the whole, no other object in the Massachusetts educational exhibit has greater interest or historic value than this remarkable volume. Another album gives fine photographic views of the school buildings and schools of Salem. The high school also sends a copy of its library catalogue, showing that the library of the school is large and has been selected with great wisdom and care. Another valuable feature of the Salem exhibit is the framed pictures of rooms decorated under the direc-



tion of Ross Turner, esq., for the purpose of art decoration in the public schools. The influence of Salem in this particular, and of Boston that began a similar work about the same time, will be far-reaching in this important work.

Somerville shows work in color, drawing, in nature study, in elementary science, in language, in geography, and in sewing. Somerville is one of the few places in Massachusetts that support free kindergartens, the others being Boston, Cambridge, Lowell, Newton, and Brookline. The course in color is very elaborate and systematic, and the drawing under the direction of Miss Balch is excellent. The course in sewing is carefully graded and arranged, and its method of exhibition could hardly be improved. The processes taught and their application in completed garments fill about fifteen show cases and form a very attractive and instructive exhibit.

Waltham shows only drawing and manual training. Drawing from the evening schools and from the high school is excellent. The manual training shows Mr. Schwartz's completed course, so far as was developed at the time of the opening of the Exposition. This course is original with Mr. Schwartz in many of its features. He follows sloyd principles, but his models are somewhat different from those of other teachers of manual training. Moreover, he carries the sloyd principle into work for high school pupils, including work in iron. His exhibit has received much attention, and has great excellence.

Westfield shows high school work only. One volume is devoted to physics, another to business practice and bookkeeping, another to chemistry, botany, physiology, and another to English. All the work in these volumes is characterized by excellent penmanship and general appearance of neatness, and are very creditable to the school. The work in bookkeeping and business practice gives a picture of the commercial part of the school justly celebrated for its efficiency. The work in chemistry and physics is laboratory work of a high order. The work in English is carefully arranged and graded. In addition to the bound volumes the school has sent several of its exercise books, not prepared for the Exposition, but showing very clearly that the work of the bound volumes is but a fair sample of the work ordinarily.

Worcester devotes one bound volume to the work of its primary schools, seven volumes to the work of its grammar grades, and three to the work of its classical high school. The primary work is taken from the third grade only, and shows the results of the ordinary manner of teaching the ordinary branches of study in this grade. The volumes devoted to the grammar schools show the results obtained in these schools. The methods of teaching seem to have some degree of originality and to be generally good. The course of study has not been seriously affected by modern notions and knowledge, and facility in its use seems to be a primary purpose of school authorities. In following out this object they reach good results. One volume from this city is

unique and valuable. It consists of pupils' monthly record books. These monthly record books are an attempt to adapt the French system to American conditions, and seem to be successful. The record books are prepared, however, not for the instructor, as in France, but for the parents, and are shown to the parents every month. The suggestion which Worcester makes in this line is worthy of being taken up and used in other places with a view to find the best method of using the monthly record book.

The high school volumes contain the usual work of the classical high schools, with a record of the work of the school in preparing its pupils for college. The record is an honorable one and it seems to have a high degree of success. All the work shown is good and some is very striking and suggestive. The drawing from Worcester primary and grammar schools is limited in amount and consists mostly of bound drawing books selected from the various schools in the city. This method of exhibiting has the advantage of showing actual results secured in the regular work. Drawings from the high school are excellent and indicate a high quality of teaching. The sketches in water color have been particularly admired. An album of photographs shows the school buildings of the city and the classes at work. A series of relief maps illustrates the careful work done in geography. Framed photographs of school buildings and classes taken by pupils in the public schools show the extent of amateur photography among school children. The evening drawing schools, long known as an initiative effort in this direction, make a display of mechanical, decorative, and pictorial drawing which does great credit to pupils and instructor. With this work is a series of plaster casts from the hands of pupils in this school. These are well executed.

Since the exhibition, the Hon. J. W. Dickinson has resigned and closed his seventeen years' service as the executive officer of the State board of education. In parting with the schools and his associates in their administration, it can be no small source of satisfaction to him that this exhibition could set forth the public school work of the State in a condition so far advanced in comparison with any other civilized Commonwealth represented at Chicago. The effective influence of the exhibit was in no small measure due to the constant presence and unfailing courtesy of Professor Gay and his assistant. Professor Gay not only entered fully into the spirit of the educational progress of the State, but was able to give much educational history which threw light upon present conditions.

#### HARVARD UNIVERSITY.

The exhibit of Harvard University was a delight to studious visitors. What an unfolding to the eye of the results of the subtle forces and processes of education! What a history! What a revelation of the sources of history! Educators owe a debt of gratitude to President

Charles W. Eliot for the conception of the exhibit, and the unfolding of that conception in the material collected and its arrangement. There was no lack of explanatory prints freely supplied, and the courteous explanations of Professor Cummings and his wife, and others in charge, left nothing to be desired by American or foreign observers. But this the oldest and most largely attended of our institutions of superior instruction, by thus leading in the exhibit of education, only performed the part which would naturally be assigned to it, and reasonably expected of it. The method and matter of the exhibit deserve the great commendations bestowed. Besides giving awards to the several departments of the university the board of judges enumerated the points of excellence as follows:

(1) For its extent, variety, and effectiveness in the scientific presentation of educational methods, resources, and equipment, and for generous cooperation in the effort of the Columbian Exposition to stimulate interest in education, and interchange of experience among teachers, students, and educational institutions.

(2) For the complete and scientific history of the growth and equipment of Harvard University as an endowed institution, exhibited in a coherent series of statistical charts, colored diagrams, and publications, showing the annual increase in teachers, students, courses of instruction, income-yielding funds, and expenditures; the growth and present resources of general, special, and departmental libraries; the increased annual expenditures for scholarships, fellowships, and other aid to students; the number of degrees conferred, and the geographical distribution of students.

(3) For vast resources of Harvard University manifest in endowments, buildings, museums, laboratories, observatories, and other property devoted to university purposes, and for extensive equipment in number of teachers, library resources, apparatus for instruction, and facilities for special investigation and research.

(4. For the great number and variety of departments represented in the faculty of arts and sciences; for the completeness of their equipment in teachers, libraries, museums, and collections; for the great number and variety of courses offered, and for the exceptional opportunities offered for selection, study, and research thus open to undergraduates and other students.

(5) For the exceptional facilities in academic training, advanced study, and research open to members of the graduate school and candidates for the higher degrees.

(6) For the size, number and importance, present resources, and equipment of the professional schools of Harvard University—divinity, law, medicine, dentistry, veterinary medicine, and agriculture.

(7) Examples of work of students, notebooks, drawings, specimens of original research, and scientific apparatus constructed by them.

(8) For valuable investigations in regard to the health and physique of the American college youth, and a systematic presentation of facilities for applying to the supervision of physical training and athletic exercise the scientific methods with which other educational problems are approached.

(9) For the successful and praiseworthy efforts to extend the facilities and instruction of the university to teachers in colleges and secondary schools and to other students, in the summer schools established.

(10) For the signal increase in annual expenditures for scholarships, fellowships, and other methods of extending the privileges of the university to needy and meritorious students.

(11) For the generous devotion of men and money to the advancement of knowledge in astronomy, physics, chemistry, medicine, and other departments of science.

(12) For the persistent and memorable services in raising the standard of education in American universities and schools.



(13) For an unbroken series of distinguished contributions to literature and science by Harvard's graduates and teachers for a period of two centuries and a half.

The awards to departments is illustrated by that given to the Harvard museums:

(1) For the magnitude, variety, and excellence of the collections comprised in the museum of comparative zoology, the natural history laboratories of zoology, paleontology, geology, and the museums of mineralogy and botany, illustrated elaborately by architectural plans and elevations, showing the arrangement and location of collections, and by a corresponding series of photographs showing the character of the buildings and contents of rooms.

(2) For the great resources and effective organization of the Peabody Museum of American Archaeology and Ethnology, illustrated by a typical example of the devices employed in representing the exact methods and results of explorations.

(3) For exceptional facilities for study and research offered by the rich collections of the mineralogical museum, represented by a typical group of specimens illustrating the formation and artificial coloring of agates, and by a remarkable and unique series of specimens illustrating an investigation in regard to the crystalline structure of meteoric iron.

(4) For the great historical and scientific value and the marked facilities for instruction and research represented by the museum of fine arts and the semitic museum, and the special collections of the departments and professional schools.

Harvard College was founded in 1636. What is now known as Harvard University includes the college, the scientific school, the graduate school, and six professional schools.

The college, graduate school, and the divinity, law, and scientific schools are situated in Cambridge, Mass., a city of over 70,000 inhabitants. The medical school, the dental school, the school of veterinary medicine, and the Bussey institution (a school of agriculture and horticulture) are situated in Boston, a city of about 450,000 inhabitants. The two cities are connected by steam, electric, and horse railways, and are separated by the Charles River. The distance from the college buildings to the business center of Boston is 3 miles.

The university is governed primarily by two boards, the corporation and the overseers. The corporation (of which the legal title is the President and Fellows of Harvard College) consists of the president, treasurer, and five fellows, all of whom hold office for life. In it is vested the title to the property of the university, estimated to be worth between eleven and twelve million dollars. The overseers number thirty-two, including the president and treasurer of the university, who are *ex officio* members. Five of the overseers go out of office each year, their places being filled on commencement day by an election, in which alumni of the college of five years' standing, masters of arts, and holders of honorary degrees from the university are entitled to vote if present in person.

The principal administrative officers of the university are the president, the treasurer, the deans of the various faculties, schools, and administrative boards, the bursar, and the secretary. The president is the presiding officer of the corporation and of each of the faculties,

and he exercises a general superintendence over all the manifold concerns of the institution. The treasurer is the custodian of the property of the university, makes its investments, and keeps its financial accounts. The deans conduct the business of the several faculties or administrative boards. The bursar is the treasurer's agent in dealing with students in renting rooms, settling term bills, and similar matters. The secretary conducts the correspondence of the university.

The college, scientific school, and graduate school are under the control of the faculty of arts and sciences, from which are appointed three executive committees, called administrative boards, each of which has its dean, and by which the college, the scientific school, and the graduate school are severally governed.

Each professional school has a separate faculty, composed of all its professors and other teachers holding appointments for more than one year.

The degrees conferred by the various departments are eleven in number, as follows:

By the faculty of arts and sciences: Bachelor of arts, bachelor of science, master of arts, doctor of philosophy, and doctor of science.

By the faculty of the divinity school: Bachelor of divinity.

By the faculty of the law school: Bachelor of laws.

By the faculty of the medical school: Doctor of medicine.

By the faculty of the dental school: Doctor of dental medicine.

By the faculty of the veterinary school: Doctor of veterinary medicine.

By the faculty of the Bussey institution: Bachelor of agricultural science.

The degree of master of arts is given with the professional degree to graduates with high credit of the divinity, law, and medical schools who are also graduates of Harvard College or whose previous training has been recognized by the faculty of arts and sciences as equivalent to that of a Harvard bachelor of arts.

The honorary degrees of master of arts, doctor of divinity, and doctor of laws are occasionally conferred upon eminent persons selected by the corporation and approved by the overseers.

The roll of graduates of the Harvard University includes the names of nearly 18,000 men, of whom about one-half are supposed to be living.

The libraries of the university contain about 400,000 bound volumes and an approximately equal number of pamphlets. Students are charged no fees for the use of books. Ample endowments make it possible for teachers to have books of reference needed for the instruction of their classes purchased by the library.

In addition to the various departments already named, the university has several other important branches, such as the astronomical observatory, the university museum, including the museum of comparative

zoology and its natural history laboratories, the botanical and mineralogical museums, the Peabody Museum of American Archæology and Ethnology, the semitic museum, the anatomical museum, the botanic garden, the herbarium, the Arnold arboretum, the chemical laboratory, the Jefferson physical laboratory, and the veterinary hospital. The Hemenway gymnasium is for the use of the whole university. The university chapel, seating 900 persons, is controlled by the preachers to the university, who are ordained ministers representing different Protestant denominations. The studies in the history of the university, brought out graphically, were extremely instructive. The following collection from these studies it has been found possible to reproduce here; each tells its own story. They were preceded by a brief statement which is also inserted here:

Harvard University is a chartered and endowed institution fostered by the State. The charter, given to the president and fellows in 1650, is still in force unaltered.

The direct grants of money made by the legislature of Massachusetts to Harvard College between 1636 and 1785 amounted to \$116,000. In 1814 the legislature granted \$10,000 a year for ten years.

Between 1633 and 1724 the town of Cambridge repeatedly gave land to the college.

In common with other Massachusetts institutions of education, religion, and charity, the university enjoys exemption from taxation on its personal property and on real estate occupied for its own purposes.

Beginning with John Harvard in 1638, private benefactors have given to the university in land, buildings, and money at least \$11,000,000.

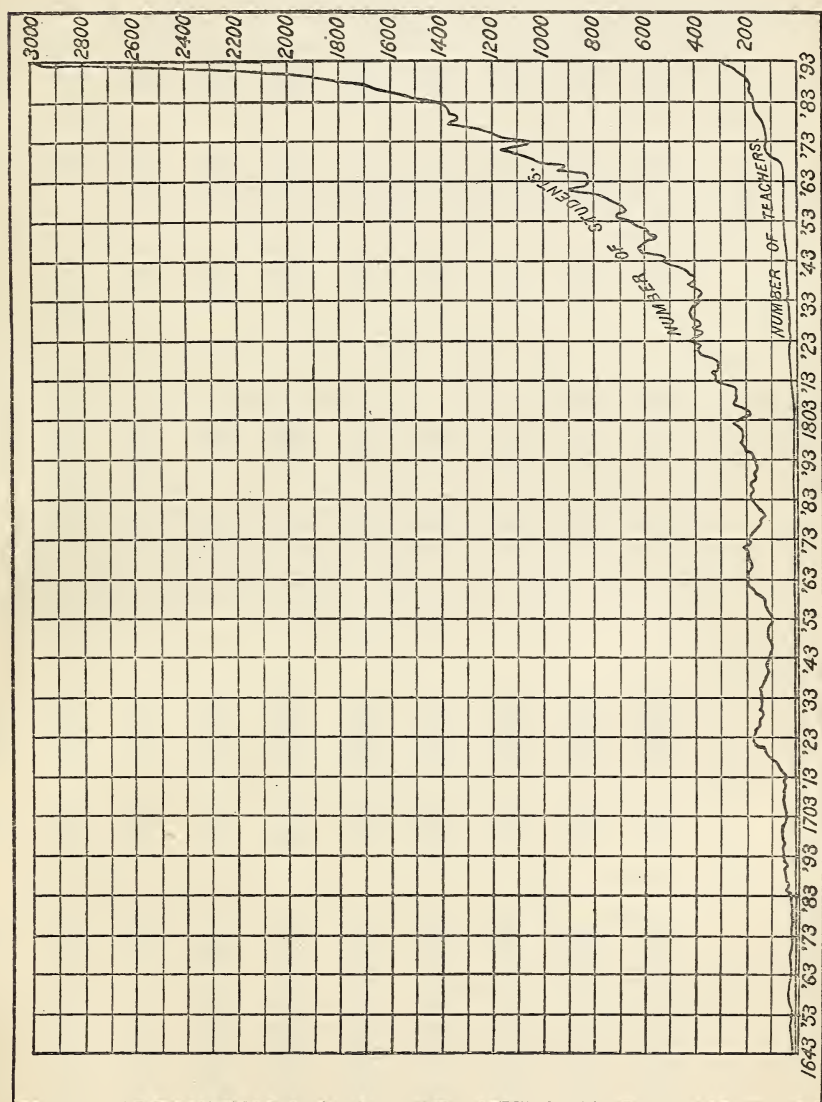
The principal objects of permanent endowment have been as follows: (1) Instruction and research (*a.* professorships, *b.* observatories, laboratories, and workshops); (2) collections (libraries, museums, gardens, and arboretum); (3) aid for students (scholarships, fellowships, and other aids); (4) prizes (for essays, versions, and speaking); (5) publications (annals, journals, memoirs, monographs, and bulletins); (6) administration (salaries in administrative offices, libraries, and collections).

John Harvard was a master of arts of Emmanuel College, Cambridge, England, founded by Sir Walter Mildmay.

"Coming to Court after he had founded his College, the Queen told him, Sir Walter, I hear you have erected a Puritan Foundation. No, Madam, saith he, farre be it from me to countenance any thing contrary to your established Lawes, but I have set an Acorn, which when it becomes an Oake, God alone knows what will be the fruit thereof." (Thomas Fuller's History of the University of Cambridge, 1655.)



CHART SHOWING NUMBER OF STUDENTS AND TEACHERS, HARVARD UNIVERSITY, 1643-1893.



## HARVARD UNIVERSITY.—HARVARD COLLEGE AND THE GRADUATE SCHOOL.

*Classified enrollment of students, by departments of instruction, from 1863 to 1893.*

[The unit in this table is one student receiving three hours of instruction per week, throughout the year, exclusive of laboratory hours.]

Courses of study.	1863-64.	1864-65.	1865-66.	1866-67.	1867-68.	1868-69.	1869-70.	1870-71.	1871-72.	1872-73.
Semitic languages and history.....							3			13
Indo-Iranian languages.....										1
Greek.....	415	404	308	314	383	348	347	398	380	375
Latin.....	417	371	389	562	407	355	404	411	427	433
English.....	231	231	223	213	198	220	182	174	251	319
German.....	37	36	91	106	209	274	274	214	361	330
Germanic philology.....										
French.....	41	53	70	40	52	207	109	234	154	152
Italian.....	26	22	35	4	6	45	74	61	26	23
Spanish.....	3			1		3		12	12	9
Romance philology.....									7	
Comparative literature.....										
Philosophy.....	203	158	219	196	302	262	253	272	251	239
Economics.....	33	26	35	31	26	18	104	119	96	92
History.....	170	132	183	165	202	236	282	239	258	244
Government and law.....							26	95	21	41
Fine arts.....									11	7
Music.....										
Mathematics.....	286	244	272	277	281	243	238	300	334	313
Engineering.....										
Physics.....	148	175	163	133	137	132	260	416	389	322
Chemistry.....	138	147	146	153	132	205	152	198	366	300
Botany.....	53	47	63	37	50	65	58	16	22	19
Zoology.....			8	17		17	26	9	26	87
Geology.....								57	63	28
Total.....	2, 201	2, 046	2, 205	2, 049	2, 385	2, 630	2, 801	3, 225	3, 455	3, 347

Courses of study.	1873-74.	1874-75.	1875-76.	1876-77.	1877-78.	1878-79.	1879-80.	1880-81.	1881-82.	1882-83.
Semitic languages and history.....	1	2	2	3	2	3	7		4	3
Indo-Iranian languages.....	2	3	1	6		7	7	5	6	7
Greek.....	380	354	427	399	386	385	438	425	434	491
Latin.....	499	455	500	434	454	503	447	410	431	473
English.....	344	335	357	449	417	419	490	458	504	444
German.....	324	370	437	428	397	447	479	424	446	517
Germanic philology.....								3	3	2
French.....	167	228	248	228	218	208	190	183	218	172
Italian.....	24	38	56	70	43	80	74	50	64	22
Spanish.....	19	27	32	58	62	60	40	45	51	42
Romance philology.....										
Comparative literature.....	8	3		16					2	
Philosophy.....	276	302	285	312	306	326	252	306	154	221
Economics.....	99	166	171	128	136	157	145	125	181	190
History.....	344	285	271	333	298	232	309	361	442	435
Government and law.....	28	52	63	117	95	91	42	52	101	96
Fine arts.....		63	116	90	78	223	135	67	105	137
Music.....	8	19	27	22	20	88	59	51	41	42
Mathematics.....	391	336	336	301	326	325	352	341	338	406
Engineering.....	7	2		1	2	2	3	3	5	2
Physics.....	300	323	378	160	209	178	206	213	234	241
Chemistry.....	314	203	160	214	216	216	231	233	262	196
Botany.....	98	56	37	78	77	105	92	111	63	48
Zoology.....	78	43	14	66	97	103	52	74	63	132
Geology.....	25	62	58	83	95	100	166	190	146	285
Total.....	3, 736	3, 727	3, 976	3, 996	3, 934	4, 208	4, 216	4, 130	4, 298	4, 604

*Classified enrollment of students, etc.—Continued.*

Courses of study.	1883-84.	1884-85.	1885-86.	1886-87.	1887-88.	1888-89.	1889-90.	1890-91.	1891-92.	1892-93.
Semitic languages and history.....	10	16	19	17	11	14	23	48	85	145
Indo-Iranian languages.....	10	8	11	8	3	4	7	5	5	13
Greek.....	493	384	428	340	315	310	342	280	434	368
Latin.....	470	437	448	401	432	392	468	393	412	550
English.....	555	928	882	822	904	935	1,053	1,120	1,236	1,480
German.....	442	426	456	555	514	421	527	634	707	814
Germanic philology.....						3	7	4	11	14
French.....	207	395	379	378	387	462	594	617	616	741
Italian.....	23	33	37	38	49	50	51	71	61	84
Spanish.....	46	47	41	39	41	48	53	92	181	82
Romance philology.....		3	2	4	4	8	11	6	10	15
Comparative literature.....									12	16
Philosophy.....	245	209	312	361	415	364	454	481	389	517
Economics.....	297	380	426	493	427	397	352	394	589	706
History.....	363	475	699	541	593	635	547	700	831	1,159
Government and law.....	103	166	148	144	179	181	200	202	223	293
Fine arts.....	177	51	201	164	284	291	304	320	403	448
Music.....	56	108	70	76	55	35	46	38	41	46
Mathematics.....	395	224	213	228	316	322	343	374	424	425
Engineering.....	4	8	27	32	26	70	80	76	54	87
Physics.....	239	129	130	144	131	128	137	123	185	216
Chemistry.....	210	223	201	252	302	249	232	319	348	354
Botany.....	78	85	75	89	88	95	113	112	142	128
Zoology.....	128	130	161	72	49	63	89	83	100	103
Geology.....	166	217	260	235	215	233	231	296	315	300
Total.....	4,717	5,061	5,631	5,442	5,740	5,710	6,325	6,802	7,814	9,100



## HARVARD COLLEGE AND THE GRADUATE SCHOOL, HARVARD UNIVERSITY.

PERCENTAGE DISTRIBUTION AMONG THE DEPARTMENTS OF INSTRUCTION OF THE AGGREGATE TIME OF ALL STUDENTS, FROM 1863 TO 1893,  
MEASURED BY HOURS OF WEEKLY ATTENDANCE, OMITTING LABORATORY HOURS.

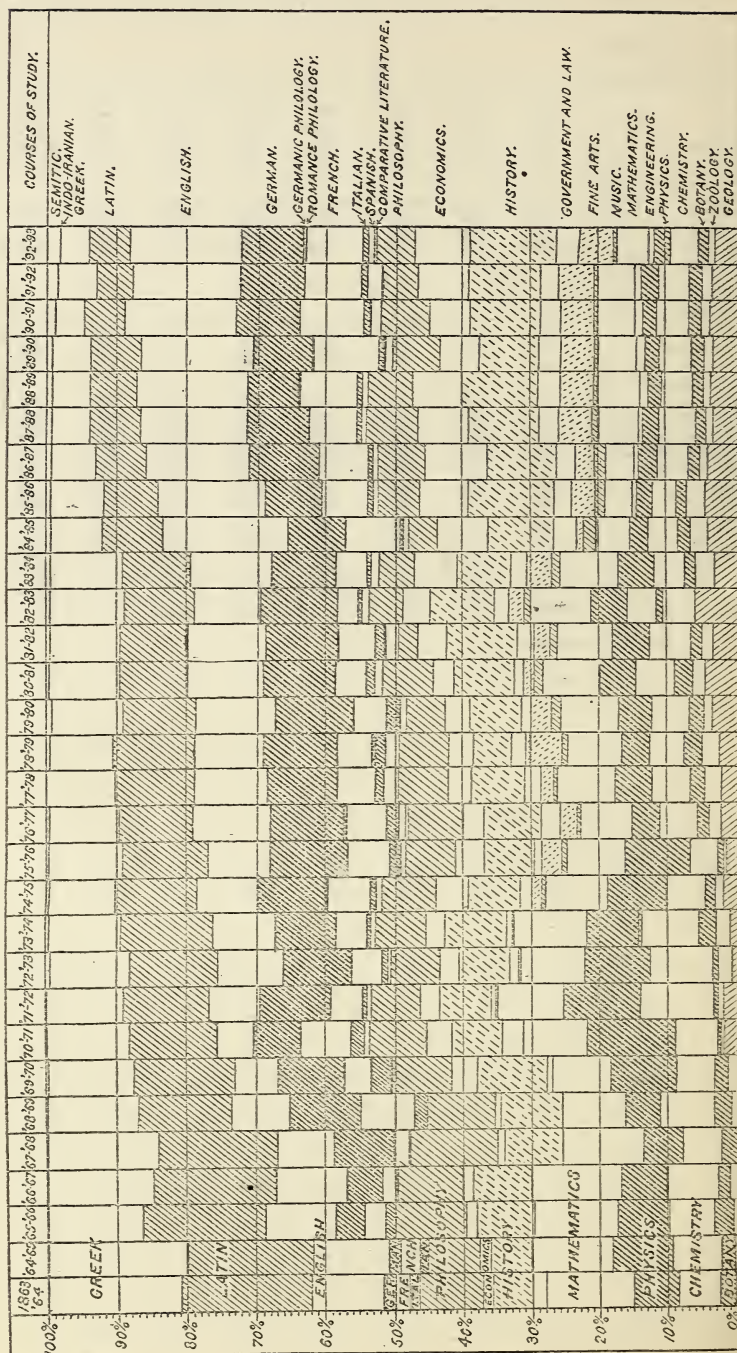
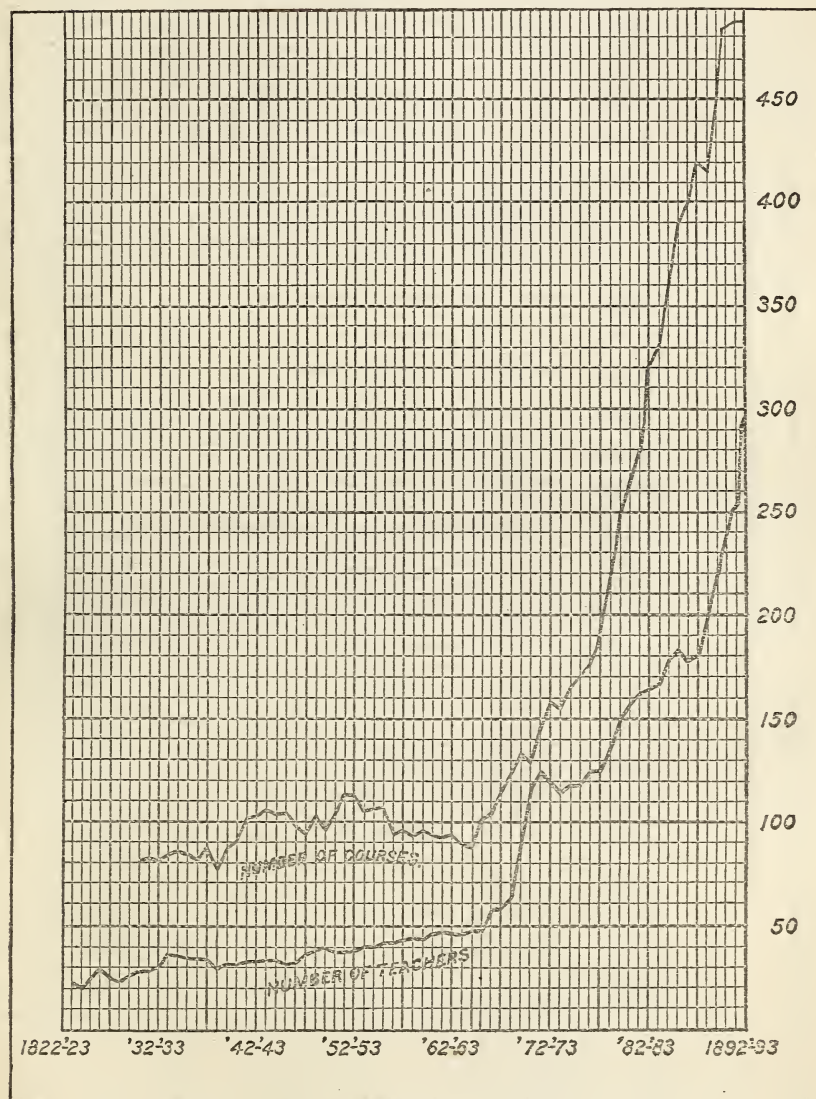


CHART SHOWING NUMBER OF COURSES OF INSTRUCTION AND NUMBER OF TEACHERS, HARVARD UNIVERSITY. 1823-1893.







Botany.....	{	1	1	3	32	3	3	2	6	4½	6	6	6	6	6	6	6	6	14	10½	10½	11½	13½	13½	13½	13½	10½	15	15	E.	
Zoology.....	}	1	1	1	1	1	1	1	3	4½	9	9	9	9	8	8	8	8	10	11	10½	13½	13½	16	15	12	12	15	16½	15	E.
Geology.....									5	5	5	5	8	8	8	8	8	10	21	21	23	21	21	24	27	30	32	42	42	E.	
Total elective.....		43	43	48	43	69	86	94	148	164	196	192	221	213	255	271	317	335	354	336	357	385½	434	462½	502	520½	524½	511½	631½	681	711
Total prescribed.....		52½	52½	50	38	32½	34½	28	28	28½	27½	27½	28½	25½	24½	24½	34	32	32	32	32	32	10	10	10	10	10	10	10	9½	9½
Grand total.....		95½	95½	98	107	118½	128½	176	192½	223½	219½	249½	268½	279½	295½	351	367	386	368	389	417½	444	472½	512	530½	534½	551½	641	690½	720½	

\* $\frac{1}{2}$  For any one student.

† From 1871-72 French or German required at admission.

‡ $\frac{1}{2}$  For any one student.

DEVELOPMENT OF THE ELECTIVE SYSTEM, HARVARD UNIVERSITY.  
HOURS PER WEEK OF ELECTIVE STUDIES, PRESCRIBED STUDIES, AND PRESCRIBED ENGLISH COMPOSITION REQUIRED OF CANDIDATES FOR THE DEGREE OF A.B. DURING THE 30 YEARS, 1863-1893.

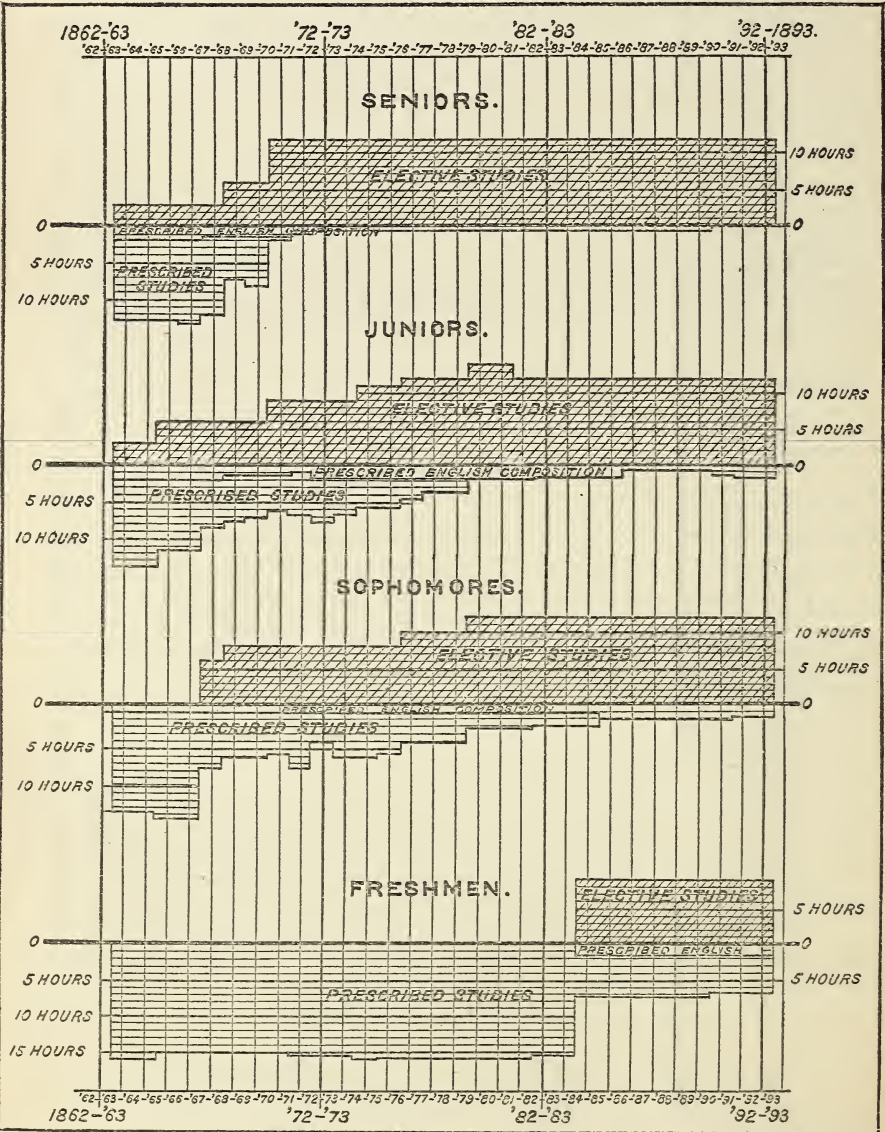
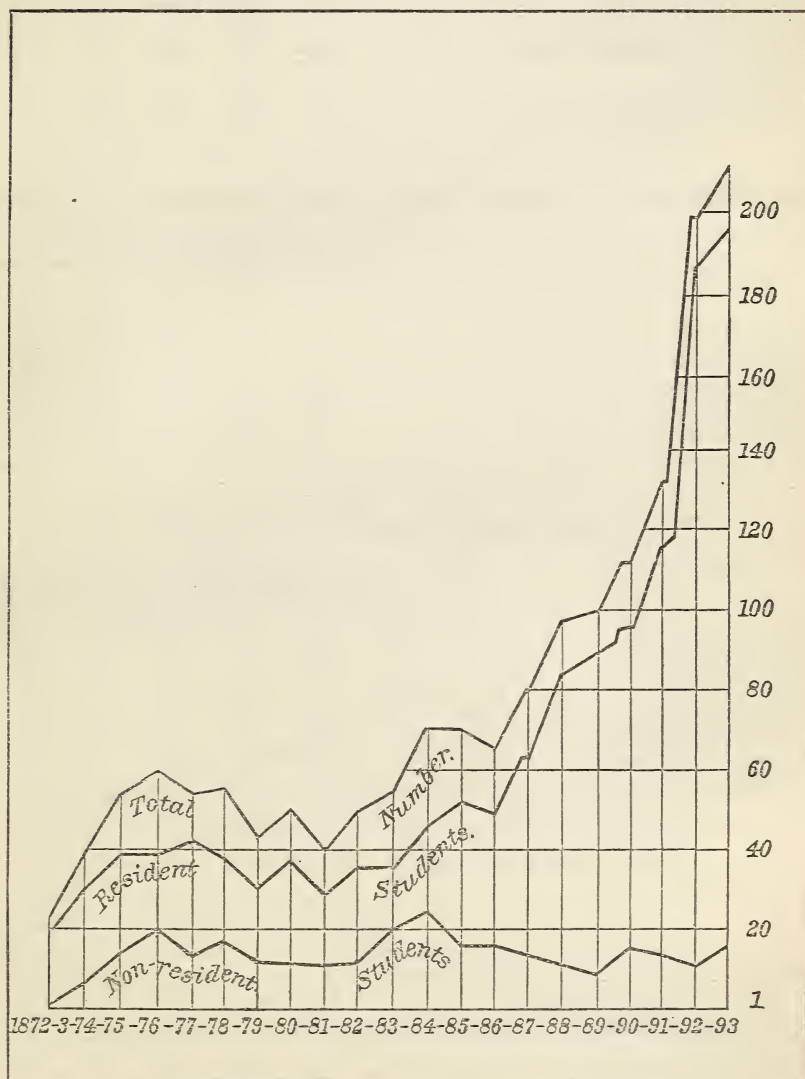


CHART SHOWING NUMBER OF STUDENTS IN GRADUATE SCHOOL OF HARVARD UNIVERSITY, 1873-1893.





*Harvard University.—Department of English, 1867 to 1893.*

	1867-68.	1872-73.	1877-78.	1882-83.	1887-88.	1892-93.
Professors .....	1	2	3	2	3	5
Other instructors.....	1	0	2	4	4	10
Assistants .....	0	0	0	0	1	4
Courses of instruction.....	6	6	9	10	15	25
Prescribed English composition .....	3	3	3	3	4	3
Elective English composition .....	0	0	1	1	2	4
Elective English language and literature.....	1	3	4	5	7	13
Elective oral debate and elocution .....	2*	0	1	1	2	5
Total hours of instruction per week.....	4	10	16	17	27	39
Total enrollment:						
Prescribed courses.....	198	277	328	346	578	779
Elective courses .....		42	89	98	326	701

\* Prescribed.

*Harvard University.—Department of history, including government and law, 1867 to 1893.*

	1867-68.	1872-73.	1877-78.	1882-83.	1887-88.	1892-93.
Professors.....	1	3	2	3	* 4	* 6
Other instructors.....	1		3	2	3	3
Assistants.....						3
Courses of instruction.....	3	9	11	15	18	32
Courses of research included in above.....				1	4	7
Total hours of instruction per week.....	6	21½	23	40½	57	72
Total enrollment.....	202	285	393	531	772	1,448
Enrollment in American history.....	40	94	106	178	239	496

\* Including one emeritus.

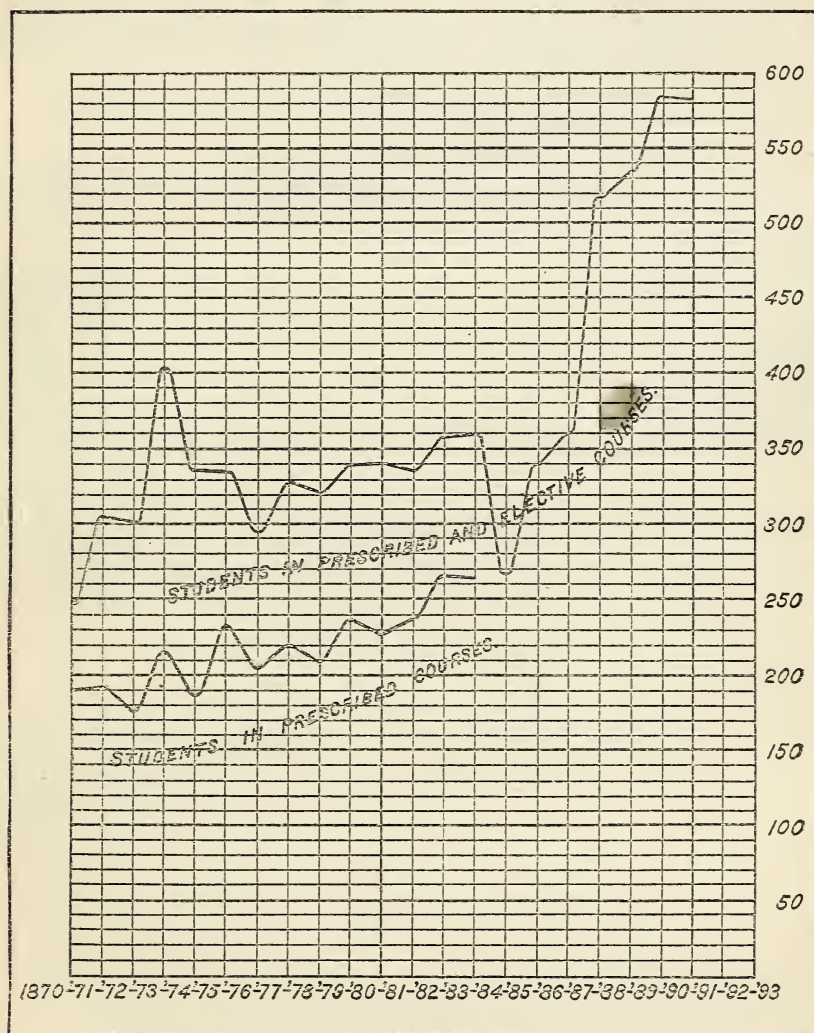
*Harvard University.—Department of mathematics, 1867 to 1893.*

	1867-68.	1872-73.	1877-78.	1882-83.	1887-88.	1892-93.
Professors .....	2	4	5	4	4	4
Other instructors.....	1		1	1	2	3
Elementary courses.....	4	6	9	7	11	9
Advanced courses.....	1	6	4	5	5	12
Research courses.....					3	3
Total number of courses.....	5	12	13	12	19	24
Total hours of instruction per week.....	17	28	30½	31	46½	66
Total enrollment of students:						
Required .....	208	235	255	317		
Elective .....	73	78	71	89	316	425

*Harvard University.—Department of economics, 1867 to 1893.*

	1867-68.	1872-73.	1877-78.	1882-83.	1887-88.	1892-93.
Professors .....	1	1	1	1	3	3
Other instructors.....			1	2		2
Introductory and historical courses.....	1	2	1	1	2	3
Courses in applied economics.....					4	4
Advanced courses.....			1	2	3	5
Hours of instruction per week.....	1	3½	6	7	22½	30
Enrollment of students in:						
General introductory courses.....	26	92	108	152	208	335
Historical, advanced, and applied courses.....			28	38	219	371
Total enrollment.....	26	92	136	190	427	706

CHART SHOWING THE NUMBER OF STUDENTS IN COURSES, MATHEMATICAL DEPARTMENT, HARVARD UNIVERSITY, 1870-1893.



*Harvard University.—Department of physics, 1867 to 1893.*

	1867-68.	1872-73.	1877-78.	1882-83.	1887-88.	1892-93.
Professors .....	2	4	3	3	4	3
Other instructors .....	0	0	0	1	2	2
Assistants .....	0	1	1	1	0	5
Number of courses of instruction .....	2	7	7	9	12	14
Hours of instruction per week .....	4	16	19	24	27½	36
Enrollment:						
Prescribed courses .....	133	273	151	178	62	.....
Elective courses .....	.....	49	58	63	69	216
Total enrollment .....	133	322	209	241	131	216

*Harvard University.—The philosophical department, 1867 to 1893.*

	1867-68.	1872-73.	1877-78.	1882-83.	1887-88.	1892-93.
Professors .....	3	2	4	4	5	7
Other instructors .....	0	1	0	1	0	1
Assistants .....	0	0	0	0	1	2
Total number of students .....	.....	58	184	247	460	618
Students holding degrees .....	.....	0	2	3	28	71
Total number of courses .....	4	6	6	10	11	19
Systematic courses .....	0	0	0	1	4	10
Historical courses .....	4	6	6	2	7	9
Seminary courses .....	0	0	0	2	3	5
Courses using text-books .....	4	6	6	8	7	5
Courses using laboratory .....	0	0	0	0	1	3
Annual cost of department .....	.....	.....	.....	.....	.....	.....



*Harvard University.—Department of German, including Germanic philology, 1867 to 1893.*

	1867-68.	1872-73.	1877-78.	1882-83.	1887-88.	1892-93.
Professors.....	0	1	2	2	2	4
Other instructors.....	1	1	4	2	3	5
Number of undergraduate courses.....	3	4	9	7	7	15
Number of graduate courses.....	0	0	1	2	1	9
Total number of courses.....	3	4	10	9	8	24
Hours of instruction per week.....	8	10	22	26	20½	60
Total enrollment of students—						
Prescribed courses.....	89	117	197	255	338	209
Elective courses.....	120	213	200	264	276	619
Enrollment in graduate courses.....	0	0	0	7	21	120

*Harvard University.—Chart showing number of degrees conferred, 1642 to 1893.*

[Grand total, 20,873.]

	1642-53.	1653-63.	1663-73.	1673-83.	1683-93.	1693-1703.	1703-13.	1713-23.	1723-33.	1733-43.	1743-53.	1753-63.	1763-73.
Honorary degrees.....							5	3	5	2	4	23	34
Doctors of philosophy and doctors of science.....													
Masters of arts by exami- nation.....													
Bachelors of divinity and alumni of divinity school.....													
Bachelors of laws.....													
Bachelors and doctors of medicine.....													
Doctors of dental medicine.....													
Doctors of veterinary medi- cine.....													
Bachelors of science, C. E., M. E., and B. A. S.....													
Bachelors of arts.....	56	78	62	47	94	141	119	190	358	300	255	291	447
Total for ten years.....	56	78	62	47	94	141	124	193	363	302	259	314	481

	1773-83.	1783-93.	1793-1803.	1803-13.	1813-23.	1823-33.	1833-43.	1843-53.	1853-63.	1863-73.	1873-83.	1883-93.	Total, 250 years.
Honorary degrees.....	31	70	32	95	132	93	61	136	127	69	52	110	1,084
Doctors of philosophy and doctors of science.....											34	58	92
Masters of arts by exami- nation.....											87	281	368
Bachelors of divinity and alumni of divinity school.....					44	80	76	85	70	74	48	48	525
Bachelors of laws.....					8	31	182	428	544	574	342	220	2,439
Bachelors and doctors of medicine.....			9	25	24	128	213	207	364	377	714	516	3,273
Doctors of dental medicine.....											39	60	217
Doctors of veterinary medi- cine.....												39	39
Bachelors of science, C. E., M. E., and B. A. S.....								5	112	73	58	44	292
Bachelors of arts.....	389	353	429	463	634	586	528	680	892	1,095	1,640	2,417	12,544
Total for ten years.....	429	432	466	582	946	1,006	1,054	1,628	2,122	2,633	2,837	4,138	20,873

CHART SHOWING GROWTH OF THE LIBRARY OF HARVARD UNIVERSITY,  
1830-1893.

Harvard College Library began in 1638 with John Harvard's bequest of 260 volumes. In 1764 the library had increased to more than 5,000 volumes, when it was burned, only two or three hundred books being saved. A chief benefactor in restoring it was Thomas Hollis, of England, who gave many volumes, and, in 1774, left a fund of £500, which is the oldest book fund of the library at present. In 1800 Samuel Shapleigh, its librarian, died and left the second fund. These two funds, amounting together to \$6,000, remained the only source of regular income for the buying of books till 1842, when a number of Boston merchants contributed \$42,000, which was not, however, funded: but was spent.

The Libraries of the Law, Medical, and Theological Schools taking form sixty to seventy years ago, together with the College Library, were held to constitute the Library of Harvard University, and this conglomerate collection of books now consists of the central or college library, of ten department libraries (Law, Scientific, Medical and Divinity Schools, Museum of Comparative Zoology, Astronomical Observatory, Herbarium, Bussey Institution, Arnold Arboretum, and Peabody Museum of Ethnology), of the collections of seven laboratories and nineteen class-rooms, making a total of thirty-one libraries belonging to the University, organized as a whole with about 415,000 volumes.

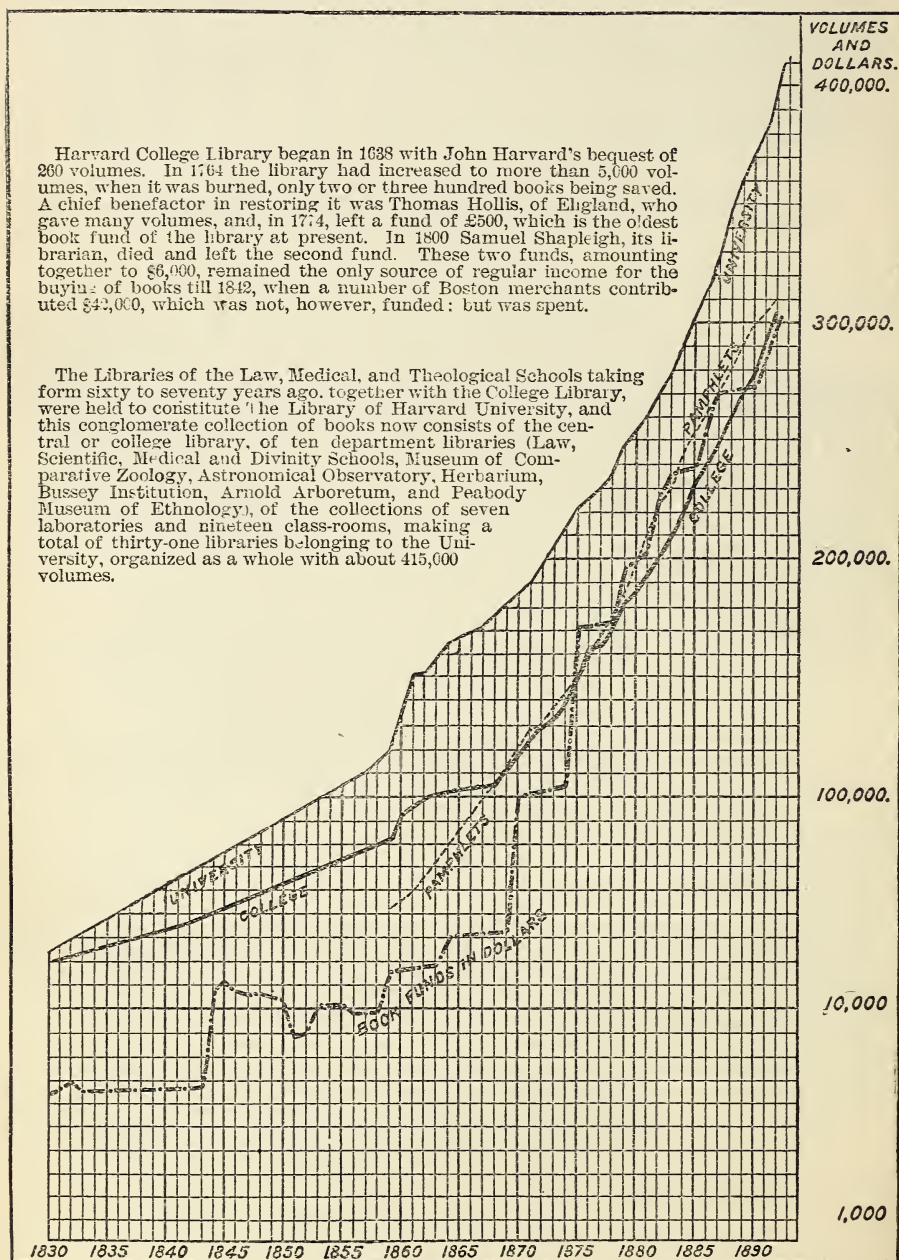


CHART SHOWING INCOME-YIELDING FUNDS, EXCLUSIVE OF ESTATES, BUILDINGS, AND EQUIPMENTS, DEVOTED TO EDUCATIONAL PURPOSES, HARVARD UNIVERSITY, 1803-1893.

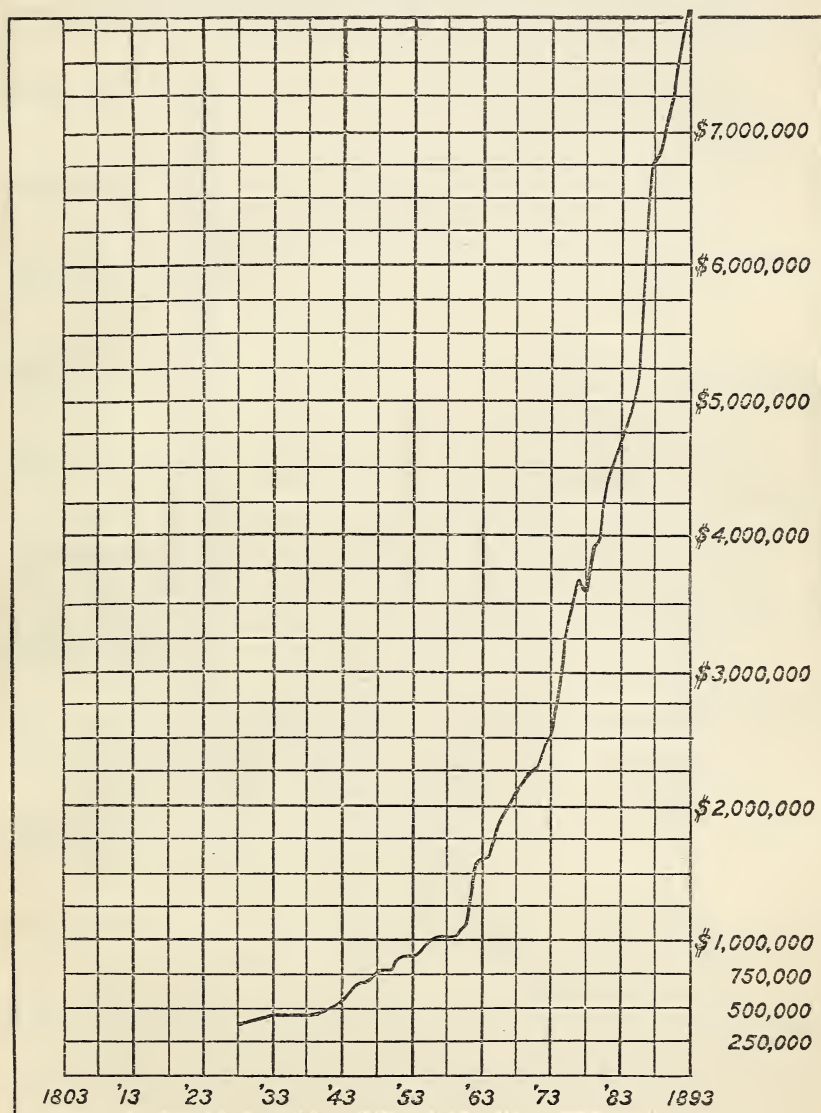




CHART SHOWING GIFTS ENTERED IN THE TREASURER'S ACCOUNTS OF HARVARD UNIVERSITY, TAKEN FROM THE ANNUAL STATEMENTS, 1856-1892.

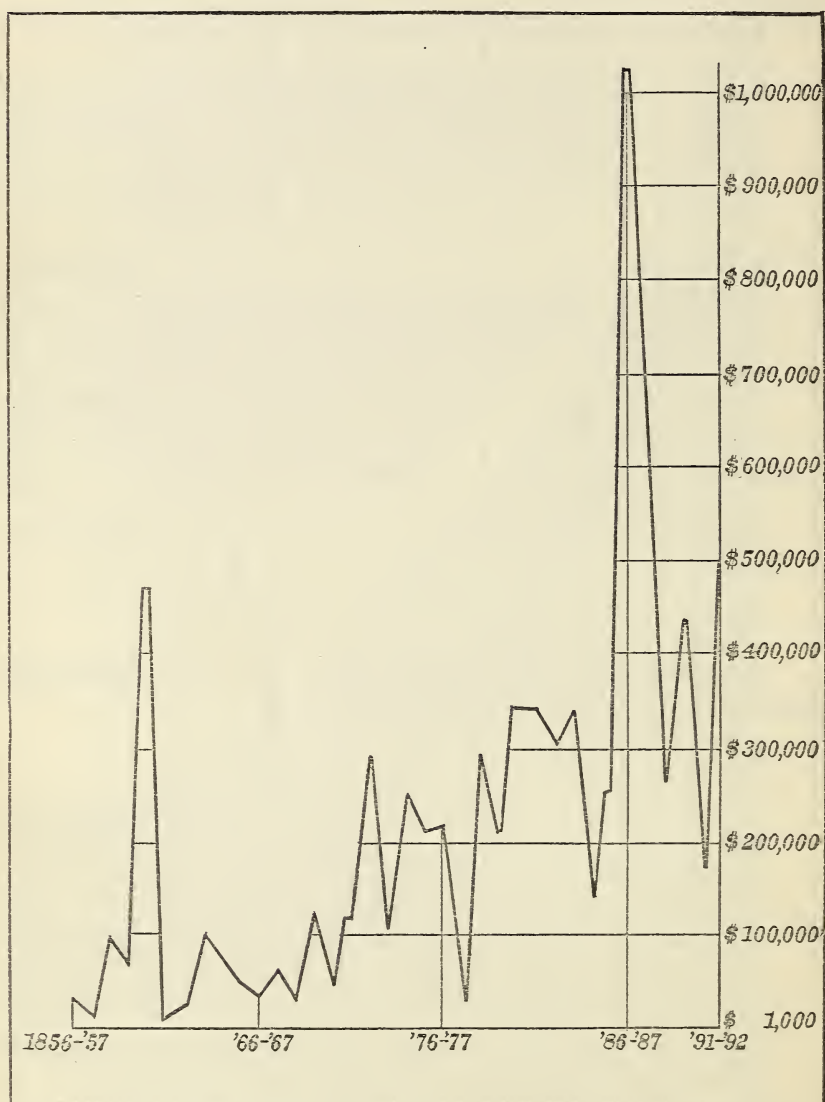


CHART SHOWING ANNUAL EXPENDITURES OF HARVARD UNIVERSITY, EXCLUDING INVESTMENTS, PAYMENTS OF CAPITAL, EXPENSES ON REAL ESTATE HELD AS INVESTMENTS, AND PAYMENTS FOR FUEL, GAS, BOOKS, AND BOARD OF STUDENTS, WHICH WERE SUBSEQUENTLY REPAID, 1856-1892.

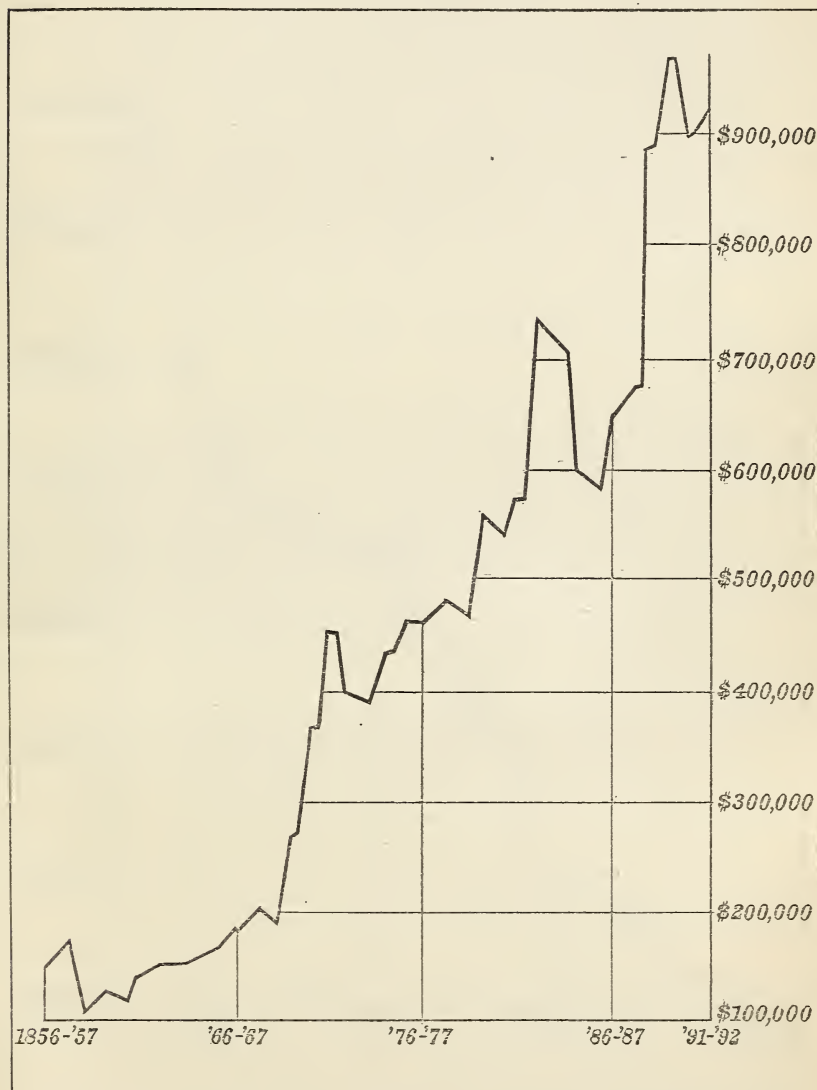
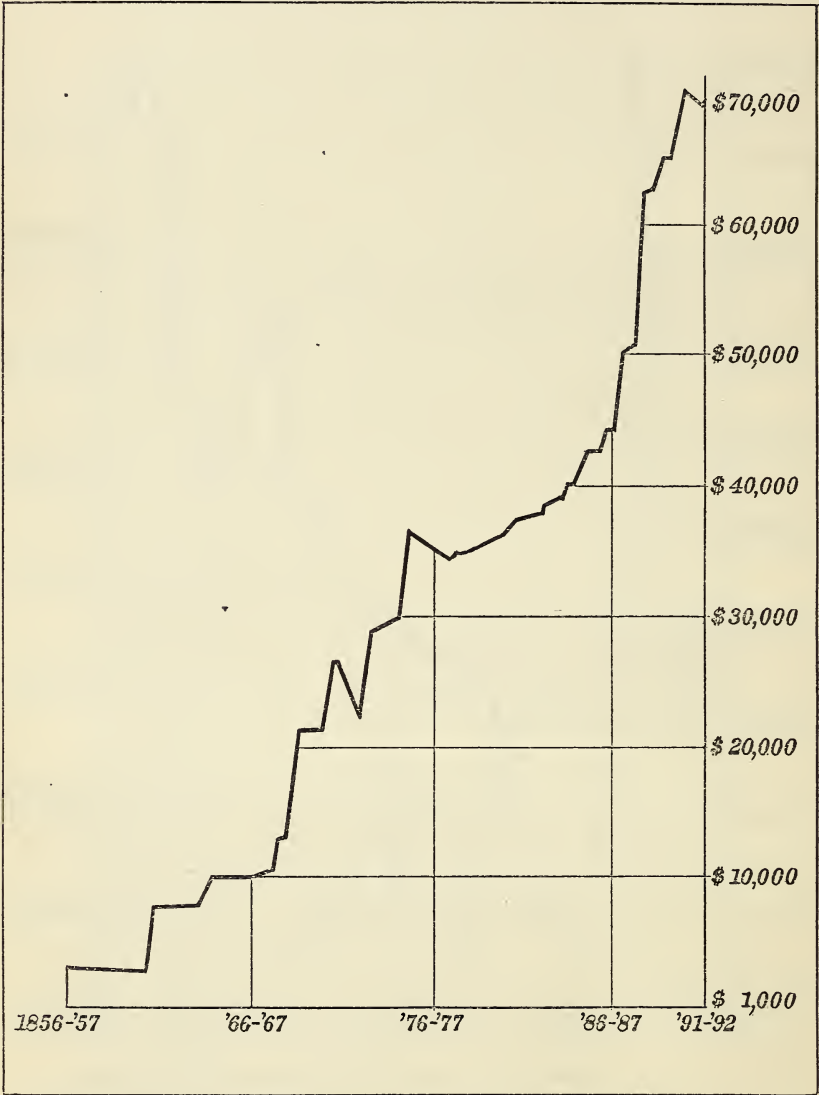


CHART SHOWING ANNUAL PAYMENTS FROM THE UNIVERSITY TREASURY FOR SCHOLARSHIPS AND OTHER AIDS FOR STUDENTS, HARVARD UNIVERSITY, NOT INCLUDING PAYMENTS MADE BY OTHER TRUSTEES OR PRIVATE PERSONS DIRECTLY TO STUDENT BENEFICIARIES, 1856-1792.





This has become one of the most important of the institutions which assure the progress of intelligence and culture in Boston. It promotes the skill of industry in various departments of activity, such as commerce and manufactures, as well as culture in literature and science. When started, it was a great departure from the old order. Hon. John D. Philbrick, LL. D., superintendent of the schools of the city, was one of the leaders who felt the need of this departure. A group of eminent men have guided it wisely toward the day of its great triumph. At the Centennial at Philadelphia, Professor Runkle, after a careful study of the Russian manual training exhibit there, adopted for the institute in the main the features there illustrated, and since then the institute has made important contributions to this department of instruction. Fortunately the doors of the institute are open to women. Here Mrs. Richards led the way in women's work in the chemical laboratory, and has done great credit to all concerned. The space occupied by the institute exhibit was packed with facts and thought. The board of judges expressed its points of excellence appropriately in their award, as follows:

For excellence (1) as a general school of technology, covering nearly the whole ground of science as applied to the useful arts, being the largest institution of its kind in the United States; (2) of extensive and varied equipment and admirable appliances and methods of instruction; (3) of courses of study arranged to supplement and reinforce one another, requiring thorough general scientific and literary preparation for specialized work; (4) of high character of students' work as shown by drawings, plats and sketches, shopwork in wood and metals, and particularly by theses of graduated students; (5) in the cultivation of correct taste as shown in students' work in general, but especially in the fine execution and lettering of drawings, and in the tinting and shading of architectural work; (6) of original researches carried on in chemistry, biology, electricity—and other specialties, for example, the examination of the potable waters of Massachusetts, both chemical and biological, carried on for the past five years in the laboratories of the institute; (7) for designs for textile fabrics by the students of the Lowell free school, a branch of the institute, showing intelligent appreciation of the need of adapting designs to the processes and machines of manufacture; (8) lecture notes, covering several thousand pages, prepared by members of the faculty and printed for the use of students; (9) of high degree of specialization—for example, courses by experts in heating and ventilation, in heat measurement in the department of physics, and in such practical arts as railway signals and electric-light wiring; (10) of arrangements and devices for administration as conducted by Gen. Francis A. Walker, president.

The exhibit of Amherst college showed the American college idea preserved in its integrity but advanced in principles and methods as well as in means and appliances to the front in their adaptation to present educational activity. The exhibit made no attempt to be striking, but yielded ample reward to every careful examination. There practice follows the theory that the number of students should not so outnumber the faculty that the influence of the latter may not permeate the whole body of the college and their personal contact or intercourse

fail to become a predominating factor in the life of the youth in attendance. The line of eminent presidents is well sustained by Hon. Merrill E. Gates, LL. D.

Williams College was represented chiefly by photographs, which recalled its solid work for Christian learning, and specially that under its great president, Mark Hopkins. Fortunately his administrative mantle is not unworthily worn by President Franklin Carter, Ph. D., LL. D.

Tufts College, a new foundation, appropriately set forth its increasing advantages. Its president, E. H. Capen, D.D., is active in bringing the college in all its relations to educational progress. It now admits women.

Clark University has a history of only a few years, but has already won leadership in special lines. Its exhibit, in addition to photos, consisted of forty volumes of advanced research. Its president is the eminent educator, G. Stanley Hall, Ph. D., LL.D.

#### INSTITUTIONS FOR THE HIGHER EDUCATION OF WOMEN.

Coeducation of the sexes has not yet been adopted by the older colleges for men in Massachusetts, but the provision for the higher education of women in the State is made in a group of institutions of great merit, beginning with Mount Holyoke, where Mary Lyon led the way in a great forward step in the education of women, which now furnishes a full college course. Then there is Smith and Wellesley, and the Harvard Annex—not to mention Abbott, Bradford, and Lasell, and others, which furnish most excellent opportunities of their grade for women, in addition to the instruction open to them in normal schools and high schools in the State. In the alcove where this feature of the exhibit was gathered the progressive women from all lands were often found taking notes. More literature could have been furnished to advantage. The pamphlet entitled Mount Holyoke College fitly says:

Through Mary Lyon, and the school she founded, God led his people into a fuller recognition of the truth that not for one sex alone was intellectual culture designed; that in His likeness woman as well as man was formed, and the gifts bestowed on her were not to be neglected. First of the chartered institutions to hold permanent funds for the education of women, its mission was twofold. First, to educate the individual woman to the highest development of her powers; second, to educate the public to allow and desire this development.

Instruction in the Catholic institutions of the State has been responsive to the general progress of education in buildings, principles, and methods. It is unfortunate that at any time there has been conflict between their friends and the public schools. The quality of their work is recognized by the numerous awards bestowed upon separate institutions and schools by the board of judges.

The work done in Massachusetts for its feeble-minded and blind and deaf and dumb, as exhibited, deserves special attention. Indeed, a survey of the educational exhibit from this State alone might easily fill a volume.



INSTITUTIONS SUSTAINED BY AMERICANS FOR THE HIGHER EDUCATION OF GIRLS  
IN OTHER LANDS.

All peoples and nations have made contributions toward the building of the institutions of America. What can be more natural than that the American people should endeavor to make some return by promoting education in other lands?

The exhibits of two institutions, originating with Americans, were installed in an alcove mainly occupied by Mount Holyoke and other institutions for the higher education of women in Massachusetts.

*The International Institute for Girls in Spain.*—This was established under the immediate care of Mrs. Alice Gordon Gulick some ten years ago as a boarding school for the higher Christian education of girls of the middle and lower classes. During this time there have been 113 boarding pupils, 90 of whom were Spanish, 18 English, 4 Americans, and 1 German. Thirty Spanish girls have graduated. Recently classes for boys have been added, and evening classes for men. The system of instruction is graded from the kindergarten to the class which is expected to take the degree of bachelor of arts from the State institute. The first girls in the history of Spain that have been prepared in a woman's school for the examination of the State institute for boys of the province of Guipuzcoa, located at San Sebastian, as candidates for the degree of bachelor of arts were prepared in this school. Two of the girls examined in 1890 received the highest marks given. The exhibit, including the explanatory literature, gives a favorable idea of the excellent work accomplished.

*The American College for Girls at Constantinople.*—This exhibit also was of special interest. The aim of this institution is to meet the demand of the Turkish Empire at Constantinople for higher Christian education for the daughters of the people of all classes of the various nationalities, for boarding and day students. The students come from Batoum in Russia, from distant cities in the Turkish Empire, and from Roumania, Bulgaria, Macedonia, and Greece, besides many from Constantinople. American ladies constitute the faculty. The college course embraces a period of four years. It is expected that another year will be added. Special courses may be pursued. The language of the college is English. Each lady of the faculty adopts one of the spoken languages of the students, and the president, Miss Patrick, is proficient in six languages. Each student is required to study her own vernacular and pass examinations in it. To meet a special want a preparatory course, including the kindergarten, has been established.

The college occupies two buildings, located on a commanding site in Scutari, a suburb of Constantinople on the Asiatic shore, overlooking the city, the Bosphorus, and the Sea of Marmora.

The income from the students has already amounted to over \$100,000. The boarding students number nearly 100. Of the 90 graduates of the



institution 50 are engaged in teaching. In the three years since the institution became a college, 19 students have taken the degree of bachelor of arts.

SOCIETY TO ENCOURAGE STUDIES AT HOME.

A modest but effective exhibit called attention to the efficient work of this Boston society. This society stands in well-marked contrast to some similar efforts which beguile people into buying diplomas. The society was founded in 1873, with the purpose of inducing ladies to form the habit of devoting some part of every day to study of a systematic and thorough kind. It is found that, even if the time devoted daily to this use is short, much can be accomplished by perseverance, and the habit soon becomes a delightful one. Its methods have been gradually matured during the nineteen years of its existence, and they will continue to be improved as experience may recommend them to the managers. Nearly two hundred ladies give their services in the instruction by correspondence, each one attaching herself to some specialty. Each one being furnished with lists of books as well as with printed directions, and constantly communicating with the head of her department, uniformity is secured, while each student is treated individually with regard to her special needs. Each student being advised also to confine herself to one or at most two subjects at a time, learns the advantage of thoroughness and the pleasure of accurate knowledge. Special reliance is placed upon monthly correspondence, the habit of making memory notes, and frequent examination on topics or books, the student being on honor not to refer to her books on answering. There are no competitive examinations and no diplomas are given. The lending library is found to be of special advantage.

The report of the twentieth annual meeting, June 1, 1893, at the house of the secretary, 41 Marlborough street, Boston, is full of interest. Eighty members were present. Such distant points as Syracuse, N. Y., and Bangor, Me., were represented. The chairman, Samuel Eliot, LL. D., presided. The work of the year was carefully reviewed, and reported much encouragement. The term extends from October 1 to June 1. In twenty years 6,534 names have been entered, some of them for fifteen, sixteen, and seventeen terms. The students are mainly from Massachusetts and the Middle States, but 28 are from the Pacific Coast States, 2 from Canada, 1 from the Sandwich Islands, and 2 from Japan, out of the 423 entered this term, of whom 193 were new students. There were 785 examinations, 3,465 letters written to students, and 3,128 received from students; the total expenditure was \$827.99. Students in science are encouraged to study after Agassiz, from specimens and not from books.

INSTRUCTIONS IN COOKERY.

*The Rumford Kitchen.*—This exhibit was located near the south door of the anthropological building. It was described as the outgrowth of the work in the application of the principles of chemistry to the science

of cooking, which has for three years been carried on as an educational agency by Mrs. Prof. Robert H. Richards, of the Institute of Technology, and Mrs. Dr. John J. Abel, with pecuniary assistance from certain public-spirited citizens of Boston.

The Massachusetts board of World's Fair managers, recognizing the high scientific character of those who have initiated and conducted this enterprise, and believing that such practical demonstration of the usefulness of domestic science could not fail to be of advantage to multitudes of visitors to the Columbian Exposition, invited the ladies named to open the Rumford Kitchen as a part of the exhibit of Massachusetts in connection with the bureau of hygiene and sanitation. In order to reduce, in some degree, the expenses of this exhibit, the food cooked in the Rumford Kitchen was sold under a concession from the administration of the Exposition; but it should be understood that this was not a money-making exhibit; that nothing was cooked for the sake of being sold, and that the enterprise was to be regarded as absolutely a scientific and educational one. The exhibit consisted of ten parts:

(1) A selection from the apparatus used in the New England Kitchen in Boston for the preparation of certain kinds of food.

(2) Samples of the food served at the tables to illustrate the effects of cooking by the methods used.

(3) Samples of food prepared for the very sick.

(4) Menus giving the composition and food value of the dishes thus cooked and served.

(5) Charts and diagrams illustrating methods of teaching important facts in connection with food.

(6) Models of some of Count Rumford's inventions.

(7) A library containing Count Rumford's complete works, and various other publications of interest.

(8) A series of leaflets written expressly for this exhibit by eminent authorities, or selected from the literature of the New England Kitchen.

(9) A kitchen laboratory table with indispensable apparatus.

(10) Some forms of apparatus and some utensils especially desirable for home use.

The purpose of the exhibit was, first, to commemorate the services to the cause of domestic science rendered by Count Rumford one hundred years ago, services which to-day stand unrivaled in spite of the progress of other departments during this century; second, to serve as an incentive to further work in the same direction, as he expressed it, "to provoke men to investigation." "to cause doubt, that first step toward knowledge."

The Rumford Kitchen, then, stands for the application of science to the preparation of food. The common practice is now well-nigh as bad as when Count Rumford so strongly deprecated it. We can to-day only echo his statements, "The common kitchen range seems to have been calculated for the express purpose of devouring fuel." "It is a com-

món habit to boil a dish of tea with fuel sufficient to cook a dinner for fifty men." "A real improvement in the art of cookery which unites the advantage of economy with wholesomeness and an increased enjoyment in eating appears to me very interesting." The century which has passed has indeed added some things to our knowledge of food. The increase in facility of transportation and in means of preservation has increased many times the number of food materials available. Chemical analysis has given us the ultimate composition of most of these food materials, and the agricultural experiment stations have, as a side issue, determined in a few cases the amount of these food materials which are daily required by the human animal, so that we have already a basis upon which to build; but there still remains the most important branch of the subject, the one to which Count Rumford gave his attention, namely, the relation of the proportion of food materials and their combination to the best and most economical nutrition of men. In fact we must carry on the study of the "science of nutrition" which Count Rumford so well began. It is, then, not as an exponent of any theory, not as an advocate of any process, not as illustrating a universal panacea for all of the ills of mankind, not as offering a completed plan to be exactly followed that the Rumford Kitchen has been fitted up, but rather to show that certain knowledge is within our reach and that certain improvements are possible in the line of our daily life. It is hoped to arouse the intelligent, thinking citizen to the need and to the possibility of improvements in these directions.

#### RHODE ISLAND.

Rhode Island exhibited characteristic features of her educational work. The State board of education gave an idea of its efficient methods. Brown University called attention to its excellent equipment for the sound college instruction which it has imparted during its long history, showing some specimens from its valuable museum of natural history.

Secondary instruction was represented by that excellent institution known as the Friends' School, so highly reputed for its thoroughness in all departments of work, and by a number of the well-equipped and well-conducted high schools like those of Providence and Pawtucket. It was gratifying to observe that these institutions are conducted with careful regard for the grades below and the grades above, and for the entrance of pupils upon active life. The question of the support of the public high school has been settled by its demonstrated utility. There is an increasing demand for its grade of instruction beyond the large cities where it was first developed. No adequate opportunity was afforded to study the work of the ungraded country schools, in which so large a share of the people receive their only instruction. But the smallness of the State gives the board of education and the elevating influences of the other cooperating agencies, such as the high schools,



normal schools, and the university, the opportunity to reach favorably the most obscure districts. The elementary work shown by cities was of excellent quality. It gave good evidence of the advance of the qualification of teachers and of the wisdom of the supervision. The normal school, once abolished, has, since its restoration, done such good work in uplifting the schools of the State by improving the teaching, that no one now would think the State could do without it. The influence of Wayland, Barnard, Hazard, Bicknell, and their coadjutors, upon the education of the State is still manifest.

The constant effort of Hon. T. B. Stockwell, the present experienced and faithful commissioner, made apparent by the exhibition to devise and adapt improved methods of teaching common schools, deserves special mention.

The drawing learned by the pupils is brought into immediate use to add interest to history, physiology, and geography. In some instances these drawings were of a high order. The progressive map drawing and dictation exercises attracted special attention. The efforts of the pupils to make apparatus and collections to aid them in their work, especially of antiquities of the place of their residence and of the products of its industries, were an agreeable surprise to many.

All grades of work in Newport and Westerly were heartily commended. The School of Design (Providence) showed an excellent exhibit.

#### CONNECTICUT.

In Connecticut the town preceded the colony or State, and towns united to form the colony or State; in other colonies, the colony or State authorized the organization of towns. Naturally, therefore, in the exhibit from Connecticut we look for emphasis of the work by towns, and some twelve exhibited. These were centers of population or larger towns. The object of the exhibit was declared to be: (1) Plans of teaching by subjects, showing the end or object in view, on charts and by complete outlines in books prepared by teachers; (2) methods, apparatus, material, and devices showing means used in teaching; (3) books containing the work of the children, showing the best work done under the plan and with the means.

The exhibit was grouped by towns, and to assist visitors who wished to study certain lines of educational work a catalogue of subjects was arranged by which the illustrations of reading, language, literature, penmanship, science, geography, history of civil government, arithmetic, geometry, drawing, manual training, clay modeling, sewing, cooking, music, and bookkeeping could be traced through the several exhibits. In such exhibits as those from New Britain, New Haven, and Bridgeport, the work of pupils could be studied in connection with the programme authorized for the schools. The system of public schools is organized according to statute, and their supervision is

intrusted to a State board of education, whose executive officer is the secretary, Hon. Charles D. Hine. Hon. B. G. Northrop was for many years known to the country as the active and zealous secretary of this board. The expenses of the public schools are met by disbursements from the State treasury and by local tax levied by the several towns. Connecticut has a historic school fund derived from the sale of western reserve lands whose operations and influence from the first is well worth careful study. The office of the secretary of the State board of education was represented by a very valuable series of State reports. There should be complete sets for historical purposes in the several towns as well as in the State office. The enforcement of the laws against absentees in this State has not only secured good results in the attendance and training of the youth, but has received decided approval from the people. The industrial school for the reform of juvenile offenders showed work indicative of good training in letters, industry, and character. The school for the education of the deaf and dumb at Hartford is the first in the United States founded for this unfortunate class. The elder Gallaudet, a man of scholarly attainments and of tender sympathies and devoted Christian character, was touched by the sight of the misfortune of the deaf-mute Alice, and went to Europe and brought to America the methods there already devised for the instruction of those deprived of the sense of hearing and the power of speech. The difficulties to be overcome were many, but the zeal of Dr. Gallaudet was rewarded by triumph over them all. The public, as pupils were trained, was called to see the results; exhibitions and explanations were made in different parts of the country. The cause was seen to be one of public concern, and State after State made provision for its deaf and dumb. The aid of Congress was successfully invoked and the education of deaf-mutes in America was not left to the uncertain private action to the extent that it was in European countries. The inclination to call these institutions asylums did not prevent their becoming a part of the public provision for the education of youth. Cities now have deaf-mute schools of their own. The Horace Mann School of Boston is a worthy illustration.

The provision for the preparation of teachers is shown by the exhibit to be made in part by the State and partly by cities. The State now provides for two normal schools, one at New Britain and one at Willimantic. The former, one of the first in the country, has a history specially worthy of study. Its establishment was inspired by Hon. Henry Barnard, LL. D., that able, early, and indefatigable educational worker. Hon. John D. Philbrick was principal for two years, but the public support was neither intelligent nor steady. However, after varying fortune, the people gave it their confidence, and the present principal, Prof. Clarence Carroll, has been cordially supported in his efficient efforts to furnish for the teachers of the State the best training of the day in the best methods and principles of instruction known in

kindergarten and the several advanced grades of the public schools. The success of the school has led lately to the establishment of another, and had no small share in promoting the formation of training classes in several of the cities, such as that in Norwich. The effect of this normal training in the best methods is manifest in all parts of the exhibition. The five alcoves in which the exhibits are grouped by towns are: (1) Willimantic; (2) New Britain, Middletown; (3) Stamford, Torrington, Norwich, Bristol; (4) Waterbury, Saybrook, Colchester, Hartford; (5) New Haven, Bridgeport.

The Willimantic normal training school exhibit showed exercises in primary reading prepared and illustrated by the teachers for the children in the model schools; models for use in manual training; material and aids for teaching arithmetic, history, civil government, literature, and geography. On the north wall of the alcove are many drawings by pupils from 6 years of age and older. These drawings are all connected with and illustrate subjects in other studies. The exhibits from the New Britain normal training school were largely made up of drawings and color work. Work was shown by pupils from the kindergarten to the grammar schools, comprising nature work, illustration, sketching, perspective, decorative, and original work in illustrating selections which they have read. A set of modified sloyd models were shown, and with them the work of children between 7 and 15 years of age, the work of the normal pupils, and a set of homemade apparatus for illustrating science teaching. Specimens of the work of children from 8 to 10 years of age in clay modeling were also shown. The normal department of the Norwich Free Academy exhibited a chart showing its inception and course of study, and another showing methods in reading and books prepared by the normal pupils outlining methods in reading, number, physics, zoology, botany, and mineralogy.

The Broad street school, Norwich, used as a training school for the normal department, exhibited outlines for literature lessons and color lessons in primary grades, a plan for history lessons and for zoology lessons, and an outline of the work actually done in the kindergarten for the year. In folios were shown children's work in color, kindergarten, history, literature, and primary reading, in connection with history for children one year in school.

The Norwich city schools showed outlines for teaching arithmetic, history, language, literature, and geography. A large putty map of Norwich and another of the United States, made by pupils in the last year of the grammar school, and a large "production" map by pupils of the third class, also a set of booklets and illustrated journeys in geography, a scrapbook of geographical pictures, and a collection of maps. There were also typical lessons in geography, arithmetic, history, and botany. Necessarily there was much sameness in the material from different schools of the same grade, but this was the basis for comparison by visitors; and yet, all can not be here repeated in detail.



In addition, it may be mentioned that Middletown showed an outline of science teaching and a collection of specimens used in natural history, zoology, botany, etc.; also plans for teaching vocal music, and the individual work of pupils, and plans for reading in connection with science studies; Bristol, aids in geography and science and geography combined, and a scrapbook illustrating geography and sloyd, the result of twenty-five hours' instruction; Waterbury, a chart showing the story of the flag; Hartford, designs and folded forms in inventional geometry, teacher's outline of lessons in history, and stenographic reports of lessons; New Haven, map drawing by the meridian system, and original drawing illustrating literature, history, science, and geography. Charts were used effectively in connection with various subjects. There was good evidence of progress in manual training for boys and girls in various schools. There were excellent specimens of sloyd.

A substantially complete set of the works of Hon. Henry Barnard, LL. D., was a unique feature of the exhibit. This was a rare collection of educational literature, containing the treatment of every variety of educational topics by the ablest thinkers from the earliest periods in different nations, together with much of the history of the various educational institutions and systems. It included (*a*) copies of his official reports while president of colleges in Connecticut, Rhode Island, Wisconsin, Maryland, and as United States Commissioner of Education at Washington; (*b*) the American Journal of Education, Volumes I to XXXI; (*c*) a set of his Library of Education, and (*d*) other publications, including Tractates and Treatises. It is a monument to the zeal, scholarship, industry, and self-sacrifice of a great educational leader.

The exhibit of high school work showed how these institutions open up the way in the public school system for the poor as well as the rich to the advantages of superior instruction. This instruction in the State was represented by Yale University. The exhibit was composed mainly of photographs, which gave an idea of the numerous and imposing buildings and varied opportunities for culture now furnished by that great university. There is little in the present imposing conditions to suggest the humble beginning, when the ministers of the colony, anxious for a school of higher learning, to their conferences each brought treasures from his own library, and as he laid them down said: "I give these books for the founding of a college in this colony." It was chartered, not by royalty but by the colony, in 1701, as a "collegiate school," and located at Saybrooke. Its first building was erected at New Haven, to which place it was removed in 1716, and becoming a college in name as well as in fact, was known as Yale College, after its largest early benefactor, from 1718 until 1887, when, having for some time done the work of a university, the title Yale University was legalized by the legislature. Its history is full of instruction. Great difficulties were encountered, great sacrifices were made, great men were found equal to every occasion, and its light never failed, but grew in illumi-

nating power, becoming a beacon not only to individuals and generations but to the nations of the earth. The college adhered to its own line of thorough work, advancing its standard as circumstances warranted, and gradually there came to it a school of theology, of medicine, of law, of science, and of art, with their special laboratories, libraries, museums, halls, and funds; but the college secured preeminent attention and by far the largest attendance. In more recent years the Sheffield school of science, the law school, and other attached schools, as well as miscellaneous post-graduate studies, have made great advances in importance and numbers. The Sheffield Scientific School, named for its principal early benefactor, founded in 1847 and reorganized on a more extensive scale in 1860, has the benefit of the United States grant of lands to Connecticut for the establishment of a college of agriculture and mechanic arts, save that expended on the Storrs school. Under President Timothy Dwight, who assumed the office in 1886, grandson of a most eminent president, the number in attendance in the entire university increased in the first six years of his administration from 1,076 to 1,969 and in the first four years of his presidency the university received \$1,244,390. It is stated that the average age of students at entrance for the first fifty years was 17, and that for the succeeding fifty years the average age was less; now it is over 18, so that most graduates are over 22 years of age.

The list of graduates contains the names of 1 Vice-President of the United States, 17 cabinet officers, 1 chief justice of the United States, 1 chief justice of Canada, 2 national officers of the Hawaiian Islands, 1 minister plenipotentiary from China to the United States, 3 judges of the United States Supreme Court, 1 surgeon-general of the United States Army, 50 United States Senators, 20 United States district judges, 1 circuit judge of the United States, 22 ministers plenipotentiary of the United States, 160 State judges, 4 chancellors, 187 members of Congress, 40 State governors, and 92 college presidents. Four Yale men—Livingston, Morris, Wolcott, and Hall—signed the Declaration of Independence. The same number, Dyer, Livingston, Johnson, and Baldwin, signed the Federal Constitution. In history Yale is represented by Trumbull, Holmes, and Pitkin; in geography by Morse; in poetry by Percival, Hillhouse, Barlow, Trumbull, Stedman, and Sill. In literature we find such names as Cooper, Willis, Judd, Bristed, and Mitchell; in scholarship, Webster, Worcester, Woolsey, Hadley, and Whitney. Silliman, Morse, Eli Whitney, Dana, Chauvenet, Loomis, and Marsh are among Yale's famous sons in science and invention. Edwards, Hopkins, Bellamy, Emmons, Dwight, Stuart, Bushnell, Taylor, Murdock, Beecher, Nettleton, Tyler, and Seabury in divinity; Gallaudet and Cogswell in the education of the deaf and dumb. In politics and law we find such names as Kent, Jeremiah Mason, Grimke, Evarts, Waite, Tilden, and Depew; in philosophy, among others, Noah Porter, Henry N. Day, and William T. Harris; among the missionaries, John Sergeant and David Brainerd.



But Yale's chief pride is that, like Virginia of old, she is a mother of presidents. Except Harvard, there are few prominent colleges which have not had at one time or another a Yale man at their head. The first presidents of the following colleges and universities were Yale men: Princeton, Columbia, Dartmouth, Williams, Hamilton, University of Georgia, Kenyon, University of Illinois, Wabash, University of Missouri, University of Mississippi, University of Wisconsin, Beloit, Chicago University, University of California, Cornell, and Johns Hopkins. Iowa University, Washington University, University of Pennsylvania, College of South Carolina, Transylvania College of Eastern Tennessee, Hampden-Sydney, Beyroot, and Oahu have also had one Yale president. Many colleges were not content with one Yale man at their head, but came to that source of supply again and again. Columbia has had 3 Yale men as president; Rutgers, 2; Princeton, 3; University of Vermont, 2; Middlebury, 2; Hamilton, 5; Western Reserve, 3; Illinois, 2; University of Wisconsin, 2; University of Missouri, 2; Washington University, 2; and the universities of California, Georgia, and Mississippi, each 2. Not only in numbers but in character do Yale educators stand foremost. Among them are Jonathan Dickinson, Samuel Johnson, Jonathan Edwards, Aaron Burr, Timothy Dwight, Theodore D. Woolsey, Noah Porter, Henry Barnard, Francis A. P. Barnard, Andrew D. White, Charles J. Stillé, Daniel C. Gilman, and William T. Harris. No picture of Yale would be natural without bringing into view its beautiful elms. Willis fitly said:

If you were to set a poet to make a town with *carté blanche* as to trees, gardens, and green blinds, he would probably turn out very much such a place as New Haven. The first thought of the inventor of New Haven was to lay out the streets in squares; the second was to plant them from suburb to water side with the magnificent elms of the country. The result is that, at the end of fifty years, the town is buried in trees.

In September, 1803, the corporation passed a vote to which the campus owes much of its beauty, "that trees should be set out next spring on both sides of the college buildings, in such order as shall best conduce to convenience and beauty," and thus Yale has her elms, and every "true-hearted son of St. Elihu loves the spot where the elm tree grows." The control of the university is vested in the corporation, which is composed of the president and eighteen fellows. The administration is in the hands of the president and the faculties of the several departments. The number of professors, instructors, and lecturers for the year 1892-93 was 185. The total number of students, 1892-93, was 1,969, coming from 45 States and Territories and 16 foreign countries.

The two undergraduate departments, the college and the scientific school, together numbered 1,495, coming from more than 300 preparatory schools. The graduate and professional schools numbered 474 students, coming from 105 colleges and universities.

The number of degrees in course conferred in 1892 was 525.



## NEW YORK.

The educational exhibit of the State of New York, under the supervision of Prof. M. Dewey, secretary of the board of regents, presented, systematically, educational methods and results in all departments, from the kindergarten to the university, comprehending institutions of secondary, superior, and professional instruction, under the board of regents, and all schools; including those for the training teachers, under the direction of the superintendent of public instruction. It occupied 1,200 square feet of floor space; the partitioning and furniture were of oak; the upholstering was in purple, the State color. The classification was graded, presenting, year by year, a collective and comparative exhibit of school work from the various parts of the State. Its arrangement sought to typify the organization, peculiar to New York, of departments and institutions. A system of signs, labels, and numbers, indexes and cross references, was used for the purpose of calling attention to allied exhibits. Experts were in attendance, speaking the principal foreign languages, who courteously answered questions. Much explanatory literature was freely distributed. It was sought to make the exhibit an attractive head quarters for New York educators. The exposition of the organization, government, and work of the kindergarten, primary, and grammar grades was made from material gathered from various parts of the State including Syracuse, Poughkeepsie, Rochester, New York City, Binghamton, Plattsburg, Cohoes, Buffalo, and Albany. Secondary instruction was exhibited by photograph, specimens of work, courses of study, and other explanations from over three hundred academies, high schools, and union schools, under the regents of the University of the State of New York; also a similar display from other institutions of the same grade. The normal schools were illustrated by photograph, illustrative work, courses of study, methods, and teaching devices from eleven of these institutions.

The photographic, historical, statistical, and literary display of colleges and universities was shared by Columbia College, Cornell University, University of the City of New York, Vassar College, Rochester University, Hamilton College, Colgate University, Teachers' College, College of the City of New York, and Normal College.

Rensselaer Polytechnic Institute, New York trade schools, and Rochester Athenæum and Mechanic's Institute presented specimens of all departments of their work, including statistics and historical and other illustrative photographs. The University of the State of New York made an extensive and systematic display of the organization, governments, and methods of each of its six departments, known as executive, examination, extension, State library, State museum, and public libraries.

University extension was set forth in a valuable collection, showing forms, methods, and examination for University of the State of New

York, Chautauqua Circle, Catholic Summer School, University of Chicago, University of Edinburgh, and People's Palace, London, and other centers, both domestic and foreign. The exhibit included 3,500 photographs of school grounds, exteriors and interiors of buildings, groups, classes at work, etc.

The collection included 900 volumes of specimens of students' work in all grades, certified as the regular work of the classes, and not "improved" for the occasion. The phonograph gave reproductions of the methods of teaching music in schools, with illustrative songs, choruses, etc., from the cities of Albany, Rochester, Syracuse, and New York. There was a graded display of work in manual training from the Albany high school, Newburg Free Academy, New York public schools, and Teachers' College. There were exhibited minimum and standard sets of approved scientific apparatus required by the regents of the university for schools of secondary instruction; also a graded display of models of homemade apparatus for illustrating scientific experiments. Administrative blanks and forms for study were collected from the cities, towns, schools, and colleges, as printed for use in school government.

The growth of education in the State was shown by 100 graphic and printed charts. A series of 53 handbooks was on hand for distribution, giving the history, equipment, and courses of study of various institutions and systems. A large educational map showed the location, grade, and support of every educational institution under the regents of the university and the department of public instruction. Many historical relics, curios, paintings, and busts added special interest to the exhibition.

The opportunity to study adequately rural schools of the State was wanting. City systems received considerable attention. New York City exhibited its ward schools in four divisions; first, work in common branches of the primary schools; second, work in the common branches of the grammar schools; third, manual training in the primary schools; fourth, manual training in the grammar schools. Separate exhibits showed the work of the college of the city, which crowns the system of instruction for boys, so long well known for its efficiency; and the normal college in which is given the most advanced instruction furnished girls by the city, and where they may receive training in preparation for teaching.

Supervision in this system has received marked recognition, as is manifested by the salaries paid. The wisdom of this supervision has done much to relieve the system of instruction for so large a number of the tendency to machine work, and to afford larger room for individual and spontaneous action of teachers and pupils. In some instances it is claimed that the work is done well in seven years that otherwise would take nine.

The imperfection of the system is seen mainly in its inadequacy. It does not furnish sufficient sittings; it does not enforce the education of every child; it allows wayward children to grow up a peril to society; it allows children of foreign birth or foreign parents to grow up without being Americanized.

The exhibit of the College of the City of New York set forth the advanced instruction furnished for young men by the public system, and that of the normal college what opportunities are afforded by it for the advanced instruction for young women and their preparation as teachers. The growth and work of each furnish interesting studies for the educator. The college for young men takes the place of the academy and is its outgrowth. The normal college is a more recent growth out of the grammar school, which came through the wisdom and efficiency of that eminent teacher, Miss Lydia Wadleigh. She took upon herself the additional labor of furnishing the instruction desired of her by young women, until the demand for it and the expediency of giving it were so manifest that it could no longer be deferred, and the normal college was provided.

In Rochester the free academy still remains, and holds close relation with the university there as well as with other college work in the State.

In Albany, the Albany Academy, greatly honored by the name of Prof. Joseph Henry, and later by that of Dr. Murray, whose service for education in Japan won world-wide recognition, and still later by that of Merrill E. Gates, once president of Rutgers College, New Jersey, and now president of Amherst, Massachusetts, maintains its excellent work. Here the high school has grown up and performed its great work for a large number of young people. At first it was claimed that the high school was not needed, and its establishment was sharply antagonized, the mayor at that time attempting to prevent it. In the argument for it, the facts were specially drawn from the national Bureau of Education. But once established, and guided by the wisdom of its efficient principal, Prof. J. D. Bradley, it was found that it had a great work to do for the city, altogether in harmony with the academy.

In Buffalo much excellent work is done by the public school, but the efficiency of the system has been embarrassed by too close connection with the general municipal administration.

In the Rochester exhibit the kindergarten of the city was effectively shown.

The entire normal school work of the State was not fully exhibited. The visitor naturally looked for the work of the pioneer normal school that received so much of its early inspiration under D. P. Page, whose theory and practice of teaching has done so much to uplift the profession throughout the country.



## THE RENSSELAER POLYTECHNIC INSTITUTE.

The Rensselaer Polytechnic Institute attracted special attention. Nothing connected with it awakened more interest and more strongly emphasized the value of its instruction than the partial record furnished of the work of its graduates. It was founded by Hon. Stephen Van Rensselaer in 1824, and during the sixty-nine years of its history it has adhered strictly to the idea of a thorough school of engineering. The results, found in what its graduates have accomplished, are most gratifying. It is difficult, of course, to secure all data of alumni, but an approximately full summary of particulars is given. From this it appears that there have been numbered among the graduates of the institute at least 33 presidents, 121 vice-presidents, managers, and superintendents, and 69 chief engineers of railroad companies, steel and iron works, bridge companies, waterworks, electric companies, mining companies, sewerage systems, canals, etc. The register shows, besides, that 56 of the graduates have been professors in 35 institutions of learning; that its graduates have assisted in the design or construction of 44 of the great bridges of this country, and in the construction of over 109,000 miles of railroad in North America. The register includes a list of those who have been State geologists, but does not name those who have attained eminence in other branches of science and engineering, not easily classified.

## PRATT INSTITUTE.

This institute was founded by the generosity of Charles Pratt, esq., and is located in Brooklyn, N. Y. This exhibit was favorably located and well installed. It was of extreme interest to all who studied it, but especially to those who are familiar with Mr. Pratt's life, from the days of his own manual labor, through the years of his successful struggles to the accumulation of millions, and had witnessed his numerous and patient investigations, preparatory to carrying out the purpose to establish an institution in which others struggling as he had in his early years might receive the instruction and aid which he could not find. There was nothing visionary in his plans. He had come to realize the power of education as applied to industry and the common duties of life.

Every department of the exhibit showed honesty of work, clear apprehension of the theoretical principles involved, and industry and fidelity in their execution. The exhibit was a credit to founder, teacher, and pupil.

In addition to studying out a wise plan for the administration of the institute, Mr. Pratt set apart, in the most careful manner, properties whose income is to be devoted to its administration and growth. He was also thoughtful of the future, as indicated in the manner in which he associated his sons in its administration.

The object of the institution has been specifically stated to be the promotion of manual and industrial education, as well as cultivation in

literature, science, and art; to inculcate habits of industry and thrift, and to foster all that makes for right living and good citizenship.

In accordance with these principles, the work of the institute is prosecuted upon four several lines, with four distinct aims in view:

(1) Educational, pure and simple; the purpose being the harmonious development of the faculties, as in the work of the high school.

(2) Normal, the ultimate aim being the preparation of the student to become a teacher. Normal training is at present given in the department of art, of domestic science, of domestic art, and of kindergartens.

(3) Technical or special training to secure practical skill in the various branches of industrial and domestic art, the handicrafts, and the mechanical trades.

(4) Supplementary and special, intended for the benefit of those who wish to supplement the training of school or college by attention to special subjects conducing to more intelligent direction of domestic, financial, social, or philanthropical interests; such training as is given in the kindergarten, domestic science, library school, and other classes.

The institute is provided with a liberal endowment, which enables it to make a merely nominal charge for tuition, and at the same time to secure the best talent and facilities for the accomplishment of its aim and purpose.

Pratt Institute occupies four large buildings—the main building, the high school building, the science and technology building, and the trade school building. Ground has already been broken for another building, which shall contain large additional accommodation for students, as well as for the public features of the institute work, such as museum, auditorium, lecture halls, and library.

The institute is under the control of a board of trustees, with a secretary as executive officer. It is divided into departments, the director of each being directly responsible for the work thereof.

Instruction is given to both sexes in day and evening classes. The terms for day classes extend from September to July, and for the evening from October to April.

The first class was organized October 16, 1887, and numbered 12 pupils in drawing. At present there are 9 different departments with a total enrollment of 3,940 pupils.

#### MISS HUNTINGDON'S KITCHEN GARDEN.

The kitchen garden was devised and developed by Miss Emily Huntingdon, of Norwich, Conn., when she was superintendent of the Wilson Mission, 125 St. Mark's Place, New York City. It may be said to be a suggestion from the kindergarten. Miniature table, dishes, and other articles of use in the kitchen and dining room, are supplied and the little girls are trained in their care and use. The exercises are made attractive and the practice has proved exceedingly helpful as a prep-

aration. Girls go from this training with great advantage to the actual care of the house, and for women, young and old, who have had no opportunity for learning to perform these household duties in a neat and orderly way, this method of training has been found one of the most effective yet devised.

A lesson trunk has been prepared for the transportation of the necessary articles of use. This may be furnished to a school or class. The operation as exhibited in the Children's Building is thus described:

A visit from this trunk is to be considered a reward. It is to be sent locked by a teacher or missionary where it has been merited in some way, and is to be used not only as an object lesson, but for the actual serving of a simple meal for a family of six. The teacher can carry the key when she takes the food, which should be something that the children would enjoy without being too expensive or elaborate, never costing more than \$1 for the supper. The teacher should pack her basket neatly, as an example, and observe the following rules in using the outfit:

Q. How do you place six people at a table?

A. One at each end and two on each side.

Q. Who sits at the end places?

A. The parents or elder members of the family.

Q. Who pours the tea?

A. The mother.

Q. Who serves the meat?

A. The father.

Q. Tell just how the trunk table should be set:

A. (1) Lay the cloth straight; (2) place the knives and forks and spoons—knives at the right, as you use them with the right hand; spoons also; forks at the left. You cut with the knife and eat with the fork; (3) arrange one end with teapot, milk pitcher, and sugar bowl at the right-hand side, and the six mugs in two neat rows at the left hand of the one who is to serve tea or coffee; (4) put plates in places, salt and pepper in the center if there is nothing prettier, putting the food on last—the meat to be served at the opposite end from the cups, and the other plates of food at intervals between. Now it is ready.

Q. When are the children ready?

A. When faces and hands and hair are neat.

Q. How should they be seated?

A. All at the same time.

Ask a blessing. Let the children pass things to each other, and teach them to serve the side dishes neatly and politely. Gradually teach them to begin and finish eating as nearly together as possible. Those that are through first must sit nicely and wait for the others to finish. When through, ask some of the children to help clear up and wash the dishes.

Q. How should we prepare for washing dishes?

A. (1) We tie on our aprons. Set away seats from the table and take up any bits of crumbs that may be on the floor. Then push the dishes to one side, making a clear place on the table, on which place the empty dish pan. Empty cups, pitcher, and teapot, and place on the table at the right-hand side of the pan. Spoons and knives and forks place on an empty platter or plate. Scrape plates and place them in a pile. Then the other dishes. Now get the hot water and make the suds by putting a piece of soap on a fork and stirring briskly in the water.



Q. How do you wash these dishes?

A. The spoons, then the cups, then the pitchers, then the teapots, then the platter, then the other dishes, last the knives and forks, rubbing off the spots with a piece of raw potato. As the pan is small, get clean water often, and as hot as possible. Now get clean water to wash the towels and pan and put to dry before packing. Wipe the enamel cloth nicely. Pack trunk and leave locked to be returned to the school.

One teacher writes of the use of the trunk and lesson:

I began with the children I knew had never sat down to a table to eat a meal in their lives. They acted awkwardly, of course, and I think would have enjoyed the good things better could they have taken them in their fingers and stood around. Yet I feel that that meal will long be remembered. The parents looked on in open-mouthed wonder. They were as much delighted as the children. Such beautiful mugs and pretty plates, and those knives and forks and spoons, were complete wonders.

SCHOOL OF APPLIED DESIGN FOR WOMEN.

(No. 200 West Twenty-third street, New York.)

The exhibit of this school called attention to an educational enterprise of rare merit. Miss Ellen J. Bond, secretary, under date of November 10, 1893, sets forth the facts and expectations as follows:

The New York School of Applied Design for Women was founded a year ago, its object being to enlarge the field for women of thorough practical, technical designing in all branches. This object it is impossible to attain unless the student comes in direct contact with the manufacturer and the trade; therefore the instructors of each department are the head paid designers of the greatest manufacturing establishments in the city.

The unprecedented success of this scheme of instruction is shown in the fact that we now have 300 students, and in the month of February, 1893, when the school was but five months old, \$1,500 worth of designs were sold, the entire amount of which went to the students. We already occupy a large four-story building and are about to fill another of the same size.

Our students come from 25 States, from Texas to Oregon and from Maine to Florida. Talent is irrespective of location and springs up at all points of the compass.

The school is divided into two departments—the elementary for drawing and the advanced for designing. All students are required to pass an examination in the elementary instruction before entering the advanced courses. The advanced department is divided into several branches—the application of design to wall paper, carpets, silks, rugs; and the application of the elementary instruction to illustrating, etching and lithography, and to the work of an architect draftsman. The latter branch is especially adaptable to women, and we have received a gold medal from the World's Fair for our work in this department, as well as medals for other departments.

We are now finishing plans for a hospital in San Francisco to cost \$30,000, and a large building for offices for London; to cost \$300,000, the first building in England built by woman. These we got in competition with several architectural firms, and we are always glad to have the privilege of competing on any work done in an architect's office.

The first six months' work has been specially successful. The best judges have commended it in strong terms.

Students have received offers for positions in architects' offices, even before they have completed the course of two years' instruction required by the school to fit them as draftsmen.

Our designs have been purchased by English firms as fast as finished, and we have orders ahead until March, 1894. We have filled many positions in various cities, in all of which women receive the same salaries as men.

This is the only school in the world in which the instructors are the paid head designers in the largest manufactories and architects' offices in the country.

The school is self-supporting (a phenomenal record), and the directors intend it to be the greatest trade school for women in the world.

#### NEW JERSEY.

The excellent plans adopted at the start by the State of New Jersey for the educational exhibit are worthy of note. General charge of the subject was given to a committee of the State board, composed of W. R. Barricklo, chairman; Dr. Nicholas Murray Butler, and John M. Scudder.

There was also a strong executive committee of educators appointed, with Hon. Addison B. Poland, State superintendent of public instruction, as chairman, and including such well-known names as educators as Principal Green and Superintendents Barringer, Spalding, Schnider, and others.

A special committee was assigned to the direct care of preparing the exhibits in different subjects, such as:

*School ground and buildings.*—Supt. Vernon L. Davey, chairman, with a number of excellent associates.

*Statistics.*—Principal Augustus Scarlett, chairman, etc.

*Kindergarten.*—Supt. B. C. Gregory, chairman.

*Drawing.*—Langton S. Thompson.

*Manual training.*—Horatio Draper.

*Natural science.*—Austin C. Apgar, chairman, etc.

There were eleven of these committees. Each committee sent out its circulars of instructions, and for general purposes the whole were bound together. Apparently from the start, no matter what uncertainties or difficulties were encountered, there was an intelligent and fixed purpose to get the most for the State out of the opportunity, and a well-defined plan of what to do within the State and what to do at Chicago. So great was the interest aroused that the committee reports measures had to be taken to discourage too extensive participation in the preparation of material, and had all participated who desired to take part the 10,000 square feet of space originally asked for would have been insufficient. As might have been expected, the exhibit was one of special value, and received marked approval both from the board of judges and visiting educators. Twelve cities and nine counties held home exhibitions of their collections before sending them to Trenton for shipment to Chicago. These home exhibitions were very much appreciated and were salutary in that effect. Before forwarding the material to Chicago it was carefully inspected and classified; very little was rejected.

The participation of country schools is remarkable. Every one of the 24 districts in Union County took part, sending 5,033 specimens. Of the 71 districts in Somerset County 50 participated.

The expense of the exhibit should not be forgotten. The State furnished paper, binding, and transportation, and paid for installation and care and printing. Fortunately S. R. Morse, for a long time the efficient superintendent of schools for Atlantic County, and his wife were secured as custodians of the exhibit. To their intelligent oversight and tireless industry the success of the State exhibit is in no small measure due. As might have been expected, the exhibit was not only one of special value, but received marked approval both from the judges and visiting educators. The lack of room led to the invention and use of the New Jersey school cabinet, a device which it is said increased more than thirtyfold the extent of the available space. It consisted of a case 36 by 28 inches, having a glass door, and containing a series of 15 wing frames swinging upon hinges, each frame designed to contain 2 large cardboards 22 by 28 inches, upon which exhibits were mounted. When closed, these cabinets preserved the exhibits from injury by dust and exposure; when opened, by simply turning like the leaves of a book, 32 frames of exhibits were successively presented to the eye of the observer. It was admitted by all who inspected the New Jersey exhibit that this device for multiplying available space was one of the most unique and valuable contributions made by any State or country to the educational department of the World's Fair.

Considering the large amount of labor involved, the result was so satisfactory—as remarked by the committee, only by reason of having the exhibit so thoroughly planned, organized, and classified, the furniture and furnishings so perfectly fitted to their place, and use before being forwarded from Trenton—that it was only necessary to unpack and set up the exhibit in conformity with the plan adopted in order to make it complete.

The variety of points of excellence recognized in the awards is worthy of special note. For Atlantic County it is said “the course of study and the system of graduating pupils are excellent.” A special award is given to Miss Lottie Gertrude Johnson, of Trenton, for showing an original way of interesting young children in the study of music. In general, in the public schools of that city, it is declared an excellent system of supervision has made its good effects manifest in music, language, science, drawing, and kindergarten. The public schools of Vine land are commended for intelligent instruction and good progress in school work in all grades, especially work in wood carving. Cumberland County public schools receive an award for excellence of work, showing progress in rural and village schools. Burlington County public schools, it is affirmed, are good generally, but especially in mathematics and language. In connection with Elizabeth, attention is called



to the manifestly good teaching, making special mention of merit in reading, English composition, and in the study of German. Of Newark, for thorough and accurate work in primary, grammar, and high schools. Of Jersey City elementary schools special mention is made of specimens in natural science, gathered and prepared by pupils, and in the study of geography, in which countries are illustrated by maps, and careful preparation of their products, together with manuscripts descriptive of the same. The manual training in Camden is commended for excellence of work generally, and specially, first, in mechanical and perspective drawing; second, superiority in carpentry; third, variety in skillful designs, and for execution in forging. Newark is noted for excellence and improvement in mechanical, architectural, and free-hand drawing. Plainfield, for systematic teaching in all grades, fitting students in Latin and Greek to enter college, and also preparing them for business. The school for the feeble-minded is commended for full and instructive showing of the excellent work done for the 1,631 persons of this class in the State, including organization, appliances, and methods, and especially in results as seen, first, by what the pupils have accomplished in composition, arithmetic, and other branches of study; and second, in the several industries taught. Of the school for the deaf there was exhibited a carefully prepared, instructive collection showing the good work of the pupils and the efficiency and excellence of the instructors. The collection from the single State normal school, under Prof. James M. Green, and its model schools was large, varied, and very instructive. In language there were 800 specimens; in singing, 100 specimens; in pedagogy, 700 specimens; in mathematics, 400 specimens; in penmanship, 200 specimens; in bookkeeping, 200 specimens; in geography, 400 specimens; in history, 400 specimens; and a large number and of excellent quality in the sciences and in miscellaneous subjects, such as drawing and manual training. The design of the exhibit was declared to be to show both method and quality and the relations of academic and pedagogical work.

The committee of the State board of education, remarking upon the value of their exhibit, say:

It is obvious that the attempt to make tangible or even pictorial any considerable part of the work of education must of necessity be a partial failure. This arises from the intrinsic nature of the educational process. Hence the expenditure of a large sum of money and the consumption of a large amount of time by teachers and pupils in preparing work for the World's Fair seemed to many, doubtless, as a waste of effort.

Admitting all the limitations and difficulties under which an educational exhibit must be made, nevertheless it is clear to your committee, as it must be to every careful observer, that not only was the exhibit useful in arousing a commendable State pride in its schools, but many other direct as well as indirect advantages accrued to the schools through participation in the educational display at the World's Fair.

It should be a matter of intense gratification to the citizens of New Jersey that her schools were able to compare so favorably with those of other States and countries. Knowledge of the excellence of our State school system has made the desire

to sustain and advance it more intense and universal. Teachers have been encouraged by the favorable comparison of their work with the work of teachers in other States; pupils have been made more enthusiastic to excel in their studies. It may safely be affirmed that nothing since the last State exhibit at Philadelphia, in 1893, has done more to awaken a general interest in education throughout the State than the World's Fair exhibit of 1893.

The committee may well congratulate themselves that of the \$15,000 appropriated by the State for the educational exhibit a balance of \$2,500 remained. They print a complete catalogue of the several parts of the exhibit and recommend that these catalogues be preserved by the respective schools. In regard to the final disposition of the exhibit, the committee urged that it be kept intact and be made use of for purposes of education within the State. Thousands of persons who were unable to visit the World's Fair would be delighted to see the State school exhibit, and these would be greatly benefited if the exhibit were suitably and permanently housed where it could be inspected.

Placed in a State museum at Trenton and made readily accessible, it would be visited by teachers, school officers, and pupils from all parts of the State. Renewed from time to time by fresh accessions, it would represent for any given date the high-water mark of educational progress throughout the State. Your committee would, therefore, most strongly urge that a suitable place for a permanent State school exhibit be provided by the legislature at its next session.

The committee very earnestly commend State Superintendent Poland in behalf of the exhibition.

#### PRINCETON COLLEGE.

The position given to Princeton College was in the gallery at the south end of the Liberal Arts Building, immediately over its main central aisle. Harvard University was located on one side of it and Columbia College on the other.

It had at its disposal 2,000 feet of floor space, and about 1,500 square feet of wall surface. The whole space was divided into two portions by the aisle of the gallery. The partition wall surrounding the space was 10 feet high.

The background of the southern space was occupied by a bookcase extending across the whole width of the section (38 feet). This case was about 4 feet high, and contained a collection of books aggregating some 3,000 volumes, the writings of the alumni and of members of the faculty; a series of the college annuals, memorabilia, etc. Above the bookcase was a series of oil paintings; in the center of the line was the large picture of Washington painted by C. W. Peale in 1784, which for a century had hung undisturbed in North College. This picture was handsomely draped with an American flag. On either side of this painting were arranged the portraits of ten distinguished deceased presidents of the college, from Dickinson to Maclean. On the side walls of this space, facing one another, were handsome crayons of ex-President McCosh and President Patton. On the same walls, one on each side, were the portraits of two Revolutionary governors, Belcher and Patterson. The remainder of this wall space was occupied by pictures of the college grounds and buildings. Thirty large platino-

types, illustrating all the college buildings, were prepared especially for this purpose, and among them was placed a collection of architects' colored sketches of some of the buildings.

In the center of this space was the model of the college grounds. This was a large relief map, showing each building, terrace, and tree upon the campus. It measured 8 by 6 feet, and being upon a good scale showed the arrangement of the grounds perfectly, forming an attractive feature of the exhibit.

Upon two easels, one on either side of this model, were placed a number of interesting college curios. Among them were the two oldest catalogues known to be extant. These were the broadsides of 1805 and 1818; a commencement programme of 1760, in Latin; a series of old diplomas, containing nearly all the signatures of the former presidents of the college; Professor Guyot's manuscript map of the distribution of the erratic bowlders of Switzerland (1849), and an original manuscript, *Physical Map of the World*, by Carl Ritter (Berlin, 1806). On one of the easels were photographs of the various members of the faculty.

The other space had but two side walls; it was, however, closed upon the side toward the edge of the gallery by a handsome arch of open grill work, which bore the legend, "Princeton College, 1746," upon both sides. At its center it supported the arms of the college (taken from its seal), surrounded by a group of national and college flags. The effect of the arch was very striking, and it was almost impossible for anyone to pass through the main aisle of the great building without seeing it, as it was one of the most prominent objects in the gallery.

Upon one of the side walls of this space was placed the exhibits from the departments of civil engineering and graphics. The other side wall was devoted to the student organizations, the halls, literary magazines, religious societies, football, lacrosse and gymnastics teams, etc.

Under the arch was a long table case which contained a series of literary treasures from the library, also specimens from the museum of historic art, consisting of samples of engravings, photographs, slides, and specimens from the Trumbull-Prime collection of pottery. Across the open space next to the aisle was another table case, containing the apparatus of Professor Henry and an exhibit from the department of physical geography, the first being the world-renowned set of instruments by means of which Professor Henry's discoveries in electricity were made. The other set consisted of a historical collection of instruments, some of them unique and others valuable for their associations. Among them were Humboldt's magnetometer, an original Fahrenheit thermometer (Amsterdam, 1632), thermometers and barometers used by Agassiz and Guyot in their Swiss glacial work, etc.

In the open space between the walls and the table cases were two tall cases and the secretary's desk. One case contained the exhibit of the E. M. museum of geology and consisted of rare and, in many instances,



unique specimens from each of the geographical epochs. There were also casts of some of the more valuable things in the museum which could not be sent. The other case contained a collection of mounted birds, representing the Atlantic Coast species, from the biological museum of the John C. Green school of science.

The Rittenhouse orrery (1770) was placed upon a platform by itself; and Franklin's electrical machine and Professor Henry's great magnet were placed near the end of the table case containing the rest of his apparatus. Under the engineering and graphics exhibit were some construction models, and upon a table were albums containing work from the department of graphics.

The exhibit was intended to cover the history, the activity, and the scope of the institution.

The exhibit was under the charge of Mr. Street (1892). He was well supplied with catalogues, directories, and also with the handbook which was prepared for free distribution with the purpose of giving concise information upon the history of the college, its buildings, its organization, and its courses of study.

#### PENNSYLVANIA.

Miss Sarah A. Stewart was in charge of the Pennsylvania education exhibit, located in the southwestern corner of the Liberal Arts Building at the intersection of the two inside aisles.

The public schools, academies, colleges, and universities were arranged in one group, and occupied 6,525 square feet of space. The art schools, in close proximity, covered with their exhibits 3,158 square feet of screens. The schools for the defective classes occupied 1,850 square feet of wall space and a small amount of floor space upon the western aisle near by, and the medical schools, located in the southwestern corner of the same gallery, filled 200 feet of floor space.

(a) It is claimed that the congregate exhibits of these several classes is fairly representative of the educational work which is being done in the State. Forty-six cities and counties are represented in the graded public school system. The leading cities of the State show a sequential development of school work from the first grade through to the high school course. The kindergarten, manual training, drawing, form and color, serving and cooking are each shown in their relation to the other courses of instruction, and mark an advance in educational method. Seven normal schools, 4 colleges, 3 universities, 4 art schools, and 3 medical schools represent the work which is being done in higher education in a creditable degree.

(b) The visitor was especially aided who was fortunate enough to examine, in common with this exhibit, two series of charts in the northeast corner of the same building, showing the scientific status of Pennsylvania and its material progress. One was prepared by the meteorological committee of Franklin Institute, of Philadelphia, and

consists of two sets of twelve charts each, one recording the weather observations of the institute and the other the same service performed with less advantages half a century ago. The other series was prepared by Mr. Lorin Blodgett, of Philadelphia, and graphically presents the wealth of the State as shown by industrial statistics.

In Pennsylvania the educational system makes prominent the borough and the county, instead of the town, as in New England. A county superintendent of common schools is elected by school directors and commissioned by the State superintendent, who is nominated by the governor and confirmed by the senate, and who is the administrator of public instruction for the State. The legislature makes the appropriations for education. The supervision is first, by the State, second by counties, third by cities. A county superintendent is required by law to have certain educational qualifications. He is paid a salary which is intended to be a reasonable compensation for his services. He devotes himself to the improvement of the schools, visiting, examining, making addresses, holding teachers' institutes, and reporting his work to the State superintendent. Supervision has been an effective agency for advancing the intelligence of the people.

Philadelphia was the last large city to adopt supervision, and, although the change was resisted by certain influences, it has resulted in great benefit to the schools, and is more and more commended by intelligent public opinion. The elements of improvement will in time leaven the entire educational work of the city.

The exhibit of the office of State superintendent was not emphasized, but from its reports and graphics could be learned something of the history and scope of its beneficent workings.

The school products exhibited came mostly from cities. They showed careful grading and thoroughness in the long-established essentials of common school instruction. The kindergarten exhibit outside of Philadelphia was limited. From that city there were excellent examples of numerous gifts, including folding, weaving, sewing, drawing, molding, and modeling. Corry, too, showed good kindergarten specimens.

Drawing in the elementary schools of the State is fast becoming as common as writing. The question of the date at which to begin the use of the pencil or pen, or both, has apparently not always been intelligently settled, but the use of both was generally good in the lower grades. From Pittsburg, Altoona, Reading, Titusville, Williamsport, and other smaller places there were good nature and geographical drawings; from Harrisburg, an alcove of construction, life, model, and design; from Philadelphia, the subject selected, illustrative of the growth of our country, deserves commendation.

Special attention was attracted to the music work of Altoona and the fine collection of language work from some of the grammar schools. The subjects of language lessons are generally well chosen from nature or objects or acts within the observation of the pupils; sometimes a

picture is used to advantage. Reading showed good lessons on plants and animals.

The one volume of bookkeeping from Allegheny seemed lonesome, it had so few companions.

The exhibit from the State left the impression that high school work needs greater emphasis; that more centers of population should have high schools. The benefits derived from this grade of instruction where it has been enjoyed would seem to afford sufficient argument for its adoption wherever the number of pupils warrants it. The efficiency and strength of high school work in Philadelphia and Pittsburg have long been conspicuous. It will be remembered that long after the establishment of the boys' high school in Philadelphia Judge Kelley, then on the bench, was able to say that up to that date not one of the graduates had been convicted of crime.

#### STATE COLLEGE.

State College, founded on the national grant in aid of colleges of agriculture and mechanic arts, an institution of growing importance, showed "systematic progressive" work in different departments. Pennsylvania has not a State university. This college under the patronage of the State and its able president may yet fill that place. The exhibit indicates how closely it has sought to follow the law for the establishment of these institutions.

Drawing has been well developed, especially in its applications. The agricultural experiment station showed good results; there were good plans for the improvement of dairy farming; a Chautauqua course of reading in agriculture suggests a similar course for minors and mechanics; model garden tools pointed to improvement in horticulture; portfolios contained specimens of students' work in botany, geology, and mineralogy; the exhibition in mechanic arts was elementary.

The educational work of the State may be further studied in the education of the blind, the deaf-mutes, and the feeble-minded; in the homes for children of soldiers, and in the institutions for juvenile offenders.

#### SCHOOL FOR FEEBLE-MINDED.

The school for feeble-minded, under Dr. Isaac N. Kerlin, at Elwyn, which received so much notice, called attention to a most deserving institution. Dr. Kerlin has been among the most effective leaders in his efforts to improve the opportunities of this unfortunate class. The response his efforts have received from the people of the State is not unfitly pointed out as a measure of the progress of our age. None familiar with the incapacity of this class of youth can fail to be both surprised and gratified at the evidence of the progress they make in letters, hand work, and conduct, under the skillful and patient training of their teachers. In institutions of this character teachers may learn many valuable lessons of the greatest import in the theory and practice of teaching. Methods must be analyzed and adapted to the pupils to the last degree.



## TEACHING SPEECH TO INFANT DEAF-MUTES.

This exhibition in the Children's Building is made at the expense of the State commissioners from the Home for the Training in Speech of Deaf-mute Children before they are of school age, in Philadelphia. The school is the result of the skill and sacrifices of Miss Emma Garrett and her sister, Miss Mary S. Garrett, and their friends and coadjutors. I can not do better than quote the description of the school, written by Miss Emma Garrett just before her death in July at the Fair, "caused by the overwork, anxiety, and constant strain of fifteen years of unremitting devotion to the conduct and well-being of the school." The following is the description:

The work of the home, like the learning to talk of hearing children, goes on through the summer as in winter. It was therefore a comparatively easy matter to transfer the training nursery work from the home in Belmont avenue, Philadelphia, to the Children's Building at the World's Fair for the summer. It was also fitting that it should appear as a Pennsylvania exhibit, since Pennsylvania was the first government in the world to aid deaf children to learn to talk at the natural age, although many of our governments are now helping them to learn to talk in the oral schools for the deaf. Pennsylvania, however, has recognized that deaf children would lose as much as hearing ones if they were not taught to talk until they began to go to school.

The teaching goes on in the Children's Building just as at the Home. The children have their backs to the audience, and do not hear them, so they are not embarrassed by them, although the classes have been visited by people from all parts of the world. Among these are many educators and parents of deaf children, who have been greatly helped by seeing the actual work.

There are two classes of twelve each; one is composed of children who have been under training since the opening of the home here in February, 1892, and the other of little ones who have just entered and those who have been there from a few months to a year.

## THE UNIVERSITY OF PENNSYLVANIA.

This is an institution whose foundations were laid by Franklin, as is often said, or by his inspiration. It is a chartered institution, administered by a self-perpetuating board, sustained by private beneficence, and therefore is the University of Pennsylvania in name only—a name which it is greatly and increasingly honoring.

Its exhibit presented something of its past history and of its present work and appliances. Rare specimens were shown from its museums—wood, iron, and copper objects from the valley of the Delaware, clay tablets, bricks, and an inscribed stone from Babylon, and mummies, historical inscriptions, and objects in wood, iron, brass, and bone textiles from Egypt. Special attention was drawn to the color mixer, its apparatus for presenting a flash of white light; its contour apparatus for tracing the outline of a body, the rate of its movements, and apparatus from its laboratory of experimental psychology. The student of its exhibit, in the midst of the regard shown for antiquity, was delighted with the evidence that the university is specially equipped and anxious to deal with the most profound and advanced questions of university education in its various departments; that it is making such contributions to education, to economics, to university extension and other live issues of the day.

The American Society for University Extension is closely associated with the university. Dr. Edmund J. James, professor in the university, is president of the society. To the extension of advanced information and higher thought among the people the university has given itself most heartily. The effect has been most salutary. Courses of lectures by men of eminence have been delivered, and received with great favor in the localities where before such opportunities were rare, or perhaps altogether beyond reach. It has brought to many busy people, and to those otherwise unable to avail themselves of the advantages of superior instruction, the inspiration of the profounder subjects, too, whose consideration is often limited to college halls. The intellectual horizon is enlarged, aspiring minds catch new clews by which they rise to a higher intellectual and moral life. It appears as a new aid to sound and healthy self-culture. Science, carried thus freely among the people by men well trained in the college or university, adds a measure of protection against the charlatanism which too often masquerades in the name of science, and imposes upon the public science falsely so called.

It is extremely gratifying to observe the successful efforts made by the university to add to its museums valuable specimens in different departments from the rare collections exhibited at Chicago.

#### WESTERN UNIVERSITY.

From the pictures exhibited the visitor could get a fair idea of the exterior and interior views and of the personnel of the faculty, trustees, and distinguished alumni. Specimens of drawings made by classes, of carpentering and wood turning by the freshman class, and of pipe fitting, forging, chipping, and filing by the sophomore class, and machine tool work by the junior class, gave evidences of careful attention to thorough and systematic instruction in these subjects. The mathematical models, by Prof. R. T. Stewart, in wire, plaster, and paper, as well as those "transformable," and those for "folding," were heartily commended as specially helpful. The observatory work deserved special attention. The good work of the university deserves special consideration from the great accumulated wealth of Allegheny and Pittsburg. There is ample room for those who would emulate the liberality of the late Hon. William Thaw, whose beneficence in his lifetime did so much for the university and other widely scattered institutions of education and charity.

#### FRANKLIN AND MARSHALL COLLEGE.

Franklin and Marshall College exhibited documents, catalogues, publications, views of the college and its presidents, but nothing which attracted more attention than the specimens from its historic collection, including the Zurich Bible of 1551, and the Barbara Fritchie Bible of 1771, a Roman missal of the twelfth century, and a Luther memorial of 1546.

## LEHIGH UNIVERSITY.

The exhibit of Lehigh University brought out well its scheme and its results in the work of students. There were views of buildings, exteriors and interiors, statistics, charts, maps, publications by the university and by its alumni and professors; there were graduating theses of students in the classical course, in mechanical, electrical, and civil engineering, also in chemistry, mining, and metallurgy, as well as notebooks and drawings. No doubt was left on the minds of the careful observers of the strength of the institution or of the thorough work it does in its several departments of applied science.

The pleasing effect of the alcoves of Bryn Mawr and the Ogontz School caused many a passer-by to pause and examine.

## BRYN MAWR.

Bryn Mawr showed its models, grounds, and buildings, and the cap and gown of the students; also photographs of exterior and interior views, publications, charts of its statistics, and courses of study for undergraduates and graduates, the whole suggesting a certain resemblance to Johns Hopkins University, and giving assurance of a most thorough and advanced work for women. Many looked with special interest into the scheme for improvement.

## OGONTZ SCHOOL.

Ogontz School exhibited its flag, pin, memorial spoon, catalogues of art exhibits, programmes, views of buildings, of classes at work, but especially students' work in water color, in oil, in black and white, in modeling clay, charts of chemical analysis, specimens in botany, and of work in astronomy, maps in ancient history, diagram for the study of the history of art, notebooks of pupils, compositions in English literature, modern history, and history of art. There were desks designed expressly for use in the school. The high aims of this school, and its sound pedagogical methods and scheme for the education of girls, were effectively set forth.

## GIRARD COLLEGE.

Girard College exhibit contained pictures of grounds and of interior and exterior views of buildings, 18 charts in geometrical and constructive drawing, 13 charts in model object drawing, specimens of work in iron and wood, model of a steam engine and of a bridge by the students, giving good illustration of the direction of the institution to the purposes of its founder. The work is thorough and systematic, and specially suited to fit boys for active pursuits. Conduct is emphasized. No clergyman is admitted to the grounds, out of regard for the prohibition of its founder. But as Webster, the great expounder of the American Constitution, showed in his argument in the Girard case that our institutions are founded in Christian sentiment, the doctrines of Christianity are made the foundation of the careful moral training of



the lads in attendance upon the institution. The institution, although designated as a college, it should be remembered, attempts only those studies which may be considered preparatory to apprenticeship, and not the advanced instruction expected of an American college proper. It stands as one of the most conspicuous of our early educational institutions enriched with great funds bestowed by private individuals, the marvel of those who are accustomed to see such large benefactions come from the hands of royalty only.

#### SPRING GARDEN INSTITUTE.

The Spring Garden Institute gained great credit by its exhibit for the work it is doing in both day and night schools. Not a few point to their training in these excellent schools as the cause of their success in life.

#### THE SCHOOL OF DESIGN FOR WOMEN, PHILADELPHIA.

(Miss Emily Sartin, principal.)

Its collection was large and varied, including silk, china, oilcloth, linoleum, cotton prints, stained glass, book covers, book headings, carpets (Brussels and ingrain). The whole was of special merit. Educationally the collection was specially deserving. The subjects were well chosen and the specimens of work gave evidence of successful training. The execution showed taste and skill. There were drawings from casts and from life, clay modeling, water colors and oil paintings from life. The school exhibited some meritorious work in the Woman's Building. In that building, also, there was much relating to woman's education in the State, women's training in hospitals, in journalism, and archæology; in the library were 400 books by women of the State.

The exhibit of the Woman's Medical College, of Philadelphia, pointed to an institution of marked efficiency, the annual attendance having reached nearly two hundred. The installation of this exhibit was especially effective.

The Hahnemann Medical College exhibited a collection which received marked attention. It showed excellence of equipment of the college and hospital, and instructive illustration of the eye, of heart and respiratory system, of the brain and nerves of sensation and motion, including a rare specimen of actual dissection in one piece of the cerebral-spinal nervous system of a human body.

#### SANITATION.

Instruction in sanitary living was especially promoted by the exhibition of the Philadelphia Workingman's Home in Midway Plaisance. This is especially credited to Miss Ellen Duane Davis. The exhibit consisted of a two-story and basement house, and is one of 150,000 precisely similar homes in the city of Philadelphia. It is claimed that in 1890 Philadelphia, with only two-thirds as many people, had twice

as many houses as New York; with just as many people as Chicago, it had half as many more houses. In Philadelphia seven families out of eight lived in separate houses; in New York the proportion was only one family in six; and in Chicago less than one-half the families live in separate houses. What the State does for public sanitation may be learned in part from the exhibition of the State board of health.

The Woman's Silk Culture Association gave interesting instruction in the Agricultural Building in this important industry, so much neglected in America. The complete process of silk manufacture was exhibited—illustrated. There were shown the silk reel, silk loom, and the cocoon under the most favorable circumstances.

The exhibit of the manual training high school of Philadelphia, established under Supt. James MacAlister, LL. D., was deservedly much commended. The manual training gave evidence of being conducted on sound pedagogical principles, and of fitting admirably the course of instruction in the lower grades as well as that of the high schools previously established. It created no jar; it was characterized by no foolishness. This exhibit was especially strong and full.

The work in manual training from Pittsburg was of good quality. There was a notable series of charts from Pittsburg, presenting work in natural science, commercial business, model and constructive drawing, and in methods in physics and biology.

The normal schools that have done so great a work for education in the State did not do themselves justice in their exhibit. None of them were adequately represented. So far as could be seen from their exhibits, they are compelled to do a large amount of work in teaching the subjects to be taught by their graduates. If the high school work of the State could be adequately increased, the normal schools could more reasonably devote their efforts to training in principles and methods, and thus specially advance the qualifications of the teachers employed in the schools of the State. It is gratifying to find evidence in the exhibit that this change is being made.

#### PUBLIC INDUSTRIAL ART SCHOOL, PHILADELPHIA.

The exhibit of this school was a surprise to many. For a considerable time its principal, J. Liberty Tadd, was present with a pupil to illustrate to the eye some of the essential principles of his methods. "Beginning with 120 pupils in 1880, the Public Industrial Art School now numbers nearly 1,200 pupils and teachers." It is declared to be "no longer an experiment, but an established element of the system of public education in Philadelphia." Mr. Tadd has been associated with this movement from its beginning as teacher and since 1884 as director. Its originator and first director, Mr. Charles G. Leland, the well-known thinker and writer, prepared a statement of its theory which was published as a circular of information by the Bureau of Education; this

was widely called for. Mr. Tadd observes that "the fact that we tried seventeen different methods of hand work proved the earnestness with which we struggled with the problem of hand training in the public schools." "To be of the greatest service," he observes, "some system of manual training should be adopted which can be taught to that large number of pupils who leave school at or before 14 years of age. These boys and girls are the ones who require our most careful attention. It is mainly this class that will be called upon to do the work that manual training schools prepare for. It is folly to say that children should not handle tools before they are 14 years of age. Knives, spoons, forks, scissors, pencils, pens, are tools which require delicate handling, yet children become quite expert in their use at a very early age. Facility in the manipulation of musical instruments, such as violins, pianos, flutes, etc., can be best attained while the pupil is young. The hands must grow accustomed to them. Is this not true of other means of expression which require similar skill, such as modeling, carving, designing, engraving, and many other processes? Certainly our twelve years of experience indicate that such is the case, and that the true education of the senses can not be begun too early in life." He adds "manual training includes all processes that train the muscles and mind to work in harmony. In some of its applications it gives skill in planing boards and shaping iron; but just as legitimately does it make the hand cunning to dissect a curve, to engrave an etching, or to finger a violin. What it must teach is this: Processes that will make the pupil muscularly as ready to begin any work when he is grown, as arithmetic and geography made him mentally ready. At the Industrial Art School they would find a dexterity taught, inculcating methods underlying success in any of 240 trades. Regard for the individuality of the pupil is the thing to be constantly kept in view; to give additional power and facility to his hand, arm, eye, and brain. Give him the power to think and create anew; see that his eye is trained, his hand made dextrous, and his brain quickened, and you may trust him to learn with ease the art of handling machines or instruments of precision. He will handle and use them the better that his whole organization has been trained. Michael Angelo said, 'Man must carry his measuring tools in his eye, not in his hand.' While the hand, the brain, the eye are growing, is the time to give them the habits essential to their highest utility, such as dexterity, flexibility, skill, and powers of perception and conception." He further says, "Many educators are willing to grant the intellectual advantages of our system of manual training, but are slow to perceive its moral results. To 'fill the mind,' to 'enrich the understanding,' is, in their view, the sole purpose of such education. This is the object, though not the sole one, of manual training by means of exact and definite study of concrete and abstract impressions of things, received physically and mentally. Notice a child drawing the Anthemion with both



hands! Coordinations are being made, (1) physically, by means of visual, muscular, and tactual impressions in four different directions, up, down, to the right, and to the left; (2) intellectually, coordinations are being made in balance, proportion, fitness, even distribution, symmetry, tangential curves, growth, etc.; (3) morally, coordinations are being made in judgment, self-control, taste, grace, and beauty, and, as power develops, higher stages of these qualities come into play in the distinguishing of differences between goodness and badness, rectitude and integrity, and their opposites in nature." He declares, "the four fundamental principles of our system of instruction are:

"First. Free-hand drawing in its simplest form. For instance, we draw a circle or leaf, one of the elementary forms in constant use, on the blackboard. In making this circle the pupils are taught to swing their hands around without support, and to make a clean drawn circular line. When any simple form can be made at a single stroke an important element of manual training has been gained. In this process both hands are employed, so as to give to each the same dexterity.

"Second. These elementary forms are modeled in soft clay.

"Third. The same forms are made in the opposite of soft clay, i. e., tough wood.

"Fourth. These elementary processes are followed by designing in those materials; creating forms on flat surfaces, in soft clay and in tough wood. By these four processes the pupils are taught to draw simple forms and all forms by aid of the hand and eye alone, and without recourse to rule and measure; to develop, diversify, and combine these so as to create original designs, and finally to give their ideas permanent expression in clay or wood. Of the numerous trades now in existence there is not one that does not have one of these four principles as a fundamental element; and if the eye, the hand, and the judgment—all tools—are well trained, the instruments of any trade can be freely handled."

The individuality alone of the child is called into play. There are no artificial aids to the result. No marks, no construction lines, no rulers, no calipers are employed; only the mind, the eye, and the hand. W. N. Hailman, Ph. D., superintendent of Indian schools, remarked:

During the Exposition at Chicago one of my chief delights was the discovery of this school. It came to me as a reproach and a prophecy—a reproach for my despondency, a prophecy of a new eureka. Here there was not a stroke of work that did not embody a complete thought clearly elaborated in the learner's mind. At every step I saw them intently, and yet without strain, gaining at the same time clearer comprehension of the object of their work and greater confidence in their powers of accurate, lucid self-expression.

#### CARLISLE INDIAN SCHOOL.

This school is supported by the United States Government, and is under the direction of Capt. R. H. Pratt, an officer of the United States Army specially detailed for this service. It takes its name from its location at Carlisle, Pa. Captain Pratt studied the negro as a soldier

and citizen, and the way in which he had progressed from barbarism by association with the whites, and became assured of his capability. In fighting Indians he had compared the Indian and negro, and said if the negroes were so changed by association the Indian can be; therefore he concluded, if the Indian is treated as a man among men, if right methods are adopted, he can and will become civilized and Christianized, a promoter instead of a destroyer of human welfare. These views led him, when detailed in charge of captured savages sent from Fort Sill to Florida for a long term of confinement, to secure permission to instruct them in letters, industry, and conduct. This was granted, and as a result when the time was at hand to return them to their tribes some 22 young men asked to stay East and go to school three years, in order to learn to live more like white men. This was brought about by the aid of friends, and 17 of them went to Hampton Institute, 4 to Utica, and 1 to Tarrytown, N. Y. Later Captain Pratt brought 49 others from different tribes to Hampton, and cooperated in securing their adaptation to the new conditions and to their becoming "interested in education." His observations led to reflections out of which sprang a separate school at Carlisle, Pa. General Hancock said, "I know of no better place for the establishment of such a school."

September 6, 1879, Captain Pratt was detailed to report to the Secretary of the Interior to work out his plans, and in October following he gathered 136 pupils from a half dozen Indian agencies, and the work was begun among them which still continues to grow in efficiency.

We quote from Captain Pratt's report to the Commissioner of Indian Affairs, dated August 31, 1893:

During these years 2,331 students were admitted to the school, of whom 1,483 were boys and 378 girls. These came from 59 different tribes. One thousand five hundred and ninety-seven have left the school, of whom only 60 graduated, all since 1889, none having completed the course earlier; 131 died at the school, and 635 still remain at date of this report.

During this period we have furnished to other schools more than 200 of our pupils as employees in the various capacities of teachers, assistant teachers, industrial teachers, mechanics, seamstresses, laundresses, cooks, and other assistants, and more than 250 have been employed at the agencies as clerks, assistant clerks, farmers, assistant farmers, and in the various mechanical and other authorized Government positions. About 80 of our students have left their tribes, at least temporarily, to try their fortunes among the whites.

The normal department, established four years ago, carries from 60 to 70 of the smartest pupils in two rooms, using from 8 to 10 of our most advanced pupils under the normal instructor as assistant teachers. These attend to their own studies in the higher departments one-half day, and teach the other half. This practice teaching has been of the greatest benefit to the pupil teachers, and is no detriment to the younger pupils.

*Industrial features.*—During the past year we have continued to give practical instruction in mechanical and other industries. The system of one-half day work and one-half day school, established in the beginning, has continued to seem to us the best adapted for the double purpose of training in industries and at the same time giving a literary education. Through our shops we have largely met the demands of the school in supplying our own wants, and have manufactured harness, wagons, and tinware in excess, for the agencies.

In the carpentering department the work has been generally repairs and improvements to buildings, making and mending of furniture, fences, etc. The blacksmith and wagon-making department has manufactured spring wagons and attended to the repair work of the school, including two farms, made bolts, hinges, staples, etc., and has shod our horses and mules. The shoemaking department has practically made the shoes for our large number of students and attended to the repairing. The harness-making department has manufactured a large amount of harness for the agencies. A gentleman from Boston, who had worked twenty-two years at harness making, visited this department during the year, watched an Indian boy making one of the most troublesome pieces about harness, and pronounced him a wonder as a workman. The boy had worked at the trade four years and two months, half-day periods only. Nearly all the suits for 450 boys have been made in the tailoring department. The tinning and painting departments have done their part in the system.

A number of our students have been efficient helpers in the care of our large steam plant where important changes have been made, and by their ability have saved us the employment of outside skilled labor.

The farms have been carried on as heretofore, with a farmer in charge of each and a number of Indian boys to assist. The products of the farms have been below those of former years because of the very dry season. We made another trial of the ensilage system in feeding our stock, and with less waste than the previous year, but I am still not satisfied. The drought prevented the corn from maturing, and I regret to report the same occurs again this year.

The dairy has been well conducted by one of our former students (a Cheyenne), and his ability in the management of our herd is most gratifying. He obtained the knowledge which fitted him for this important place under our outing system.

The bakery is also in charge of a former student who, with the assistance of Indian boys, has provided good bread for the students.

The printing office, which has always been one of the most valuable departments of the school, calls for more special mention than I have heretofore at any time given to it. The work of this department comprises the publication of two papers: The Red Man, an eight page quarto, standard size, monthly, with a circulation of from 2,000 to 3,000, and The Indian Helper (10 $\frac{1}{4}$  by 15), weekly, circulation 9,000; also all the job work of the institution, consisting of numerous circulars, blank reports for the different departments, letter heads, envelopes, lists of pupils for use at the several quarters, constitution and by-laws for the societies and clubs, labels, pamphlets, official documents, blank receipts, booklets, and lesson leaves for the educational department, invitations, visiting and business cards, programmes, photograph cards, and numerous other jobs covering a valuation of hundreds of dollars if contracted for outside of the school.

It is our aim to give to each apprentice a full course in composition, and as much of a course in the job, stone, and press work, as the facilities allow.

We have had under instruction during the year 35 apprentices, with an average daily attendance of 16.

The sewing department has made all the girls' clothing and the boys' underwear. The larger and more efficient girls have been specially trained in dressmaking.

While a number of boys who have been trained in our industrial departments have reached the grade of fair journeymen workers, and have gone out among the mechanics of this section and in other parts of the country, and worked successfully in competition, earning their own living, it is a pleasure to note that girls trained in our sewing department have also been enabled to take care of themselves after leaving the school through the knowledge gained in that department.

Since the Government established Carlisle as an industrial school, the idea of industrial training in schools has made wonderful progress throughout the whole country, and a variety of manual, technical, and trade schools have been originated. A number of persons interested in establishing these schools have visited Carlisle



and studied our methods. I may mention particularly Mr. Auchmuty, of the celebrated Auchmuty Trade School of New York, who spent two days with me before he started his scheme, and closely followed our system in his school. Mr. Pratt, of Pratt Institute, Brooklyn, sent his principal man here before establishing his school, and some of our features were adopted there.

*The outing system.*—This is the placing of our students out among farmers and others during vacation that they may earn money for themselves, and learn practically those lessons in civilized life that can be taught only imperfectly and theoretically in any school. It also provides that a considerable number may enjoy the privileges of public and other schools and association with white children. During the year 621 pupils were thus out, of whom 376 were boys and 245 girls. We received requests for 692 boys and 591 girls, so that we were able to supply less than half as many as were asked for. Two hundred remained out in the public schools for the winter.

There are two Sioux who were among the first pupils of Carlisle, one of whom remained four years, the other five years. They are indebted to this school for all the English and all the education and industrial training they had at the time of leaving it. They each spent over a year of their stay, under Carlisle's care, in Mr. Wanamaker's great store in Philadelphia, one in the accounts department and the other in the shipping department. One has been at home eight years, and the other nine. They have been continuously, as I have been constantly informed, rendering most valuable assistance in the school work on their reservations. The short period they each spent under the influence of the push of Mr. Wanamaker's hive of industry did more to fit them for usefulness than ten years in the best Indian school that could be devised, equipping them not only for the work they have since been able to accomplish on the reservation, but rendering them perfectly competent to swing out from the reservation and hold their own among white men, which is after all to become the final lot of all Indians if the Government is ever to be freed from the care of them.

Two former students of Carlisle who began life under the most veritable savage conditions, and came to Carlisle directly from those conditions, have been elected to, and are now filling, responsible county offices in the West called thereto by the votes of white men. Other examples by the score can be supplied.

The inquiry that should be made by all true friends of the Indian in regard to the results of Indian schools should not be that which is so universal, "What becomes of them after they go back; what do they do on the reservation?" but should be, "What progress are Indian schools making toward rendering Indian youth capable of citizenship and independent of the tribe, reservation, and Government support?" In answer to these last questions Carlisle is now and always has been ready with a full reply.

I state again, what I have so often stated before, that, thanks to the outing system and our facilities for applying it here, not more than one of our children in twenty who has passed three years or more under our care is unable to succeed in civilized pursuits among civilized people. Through their outing experiences their fears of the white man and of associating with him and of competing with him have been removed, and were it not for the tremendous pressure manipulated to draw them back to the reservation, many times a larger proportion would pass out and assume place in our civilized communities.

*Savings system.*—This system originated here and was established in the beginning of the school. It covers the wages earned in the industries of the school and the earnings of the pupils during their outings, and furnishes an opportunity to give all students instruction in economy and thrift and the keeping of accounts. All their earnings are deposited. An exact account is kept, and each depositor has a bank book, and is encouraged to put as much money as possible on interest. Under the regulations of the Department, apprentices work the first four months for nothing;

thereafter, for the first year they receive 4 cents for each half-day's work; the second year, 6 cents; the third year and after, 12 cents. These small payments give them valuable encouragement.

The earnings under the outing system are very much more material. All students are urged to save. Once a month they are given an opportunity to make purchases of necessary articles. These expenditures are made under the supervision of the officers of the school. That they may be made wisely, each scholar is furnished with an application blank on which to state how much money is wanted and for what purpose; likewise the amount in bank, which the student finds by balancing his account book. Book and application are then handed in for examination and approval and, if the balance be correct and the articles be approved, his paper is cashed and he makes the purchases, which are submitted to the inspection of the matron or disciplinarian.

They earned during the year \$24,121.19, of which the boys earned \$18,351.54 and the girls \$5,769.65. Their savings at the end of June amounted to \$15,274.99, of which \$11,991.51 remained to the credit of the boys and \$3,283.44 to the credit of the girls. About \$7,000 of these amounts bears interest at 6 per cent and 3 per cent. Nearly every student returning home at the close of the year had money thus earned. One party of 86 took over \$1,300. Home-going students usually have a good trunk well filled, and some take sets of tools and other facilities to make earnings elsewhere.

The exhibit of the school contained a wagon made for the United States Government; in carpentering, doors, shutters, desks, various ways of joining, cabinets, woodwork; in blacksmithing and work in metal, tools for work in iron and wood, horseshoes, ironwork for wagons, steam-pipe fittings; tinware, coffee-pots, cups, buckets, and pans; in harness making, one single set, two double sets of harness; in shoe-making, men's and women's high and low shoes; in dressmaking, plain sewing, mending, darning, and knitting; several specimens of embroidery in silk, linen, and cotton; in china painting, several specimens; in graded common school work from the first through the ninth grade in spelling, arithmetic, writing, drawing, language, geography, physiology, and history. Many photographs, charts, and publications added helpful information.

But the most effective exhibit by the Carlisle Indian School was the visit of 500 of its pupils to the Fair in October. They came by special train. Captain Pratt secured special rates and they paid their expenses from their savings. The White City was a wonder world to them. A programme was offered for each day, but they were given entire freedom either to accept it or to choose their own objects of interest. For four days the boys and girls saw the sights. Their yellow ribbon told everybody who they were. Their good dress, made of good material by their own hands, their orderly conduct and quiet, respectful manners and eager intelligent observation, won from the hundreds of thousands of visitors on the grounds during the days of their stay most hearty approval. It was an object lesson in Indian education. The contrast between them and the wild Indians showing themselves about the Fair was never before seen by so many. It left in the minds of the observer no doubt of the powerful beneficent effect of education. Their well-trained band was a special attraction.

What lessons they learned in patriotism and conduct, in history and the progress of arts and industries in the world! What lessons from the Fair will they teach to others as long as they live!

Pennsylvania took care to instruct those visiting its exhibit both in natural history and the history of its occupation by the white man. In the Mines Building, its rich mineral resources and the processes of their development could be studied; in the Forestry Building, its variety of trees; in the Anthropological Building, its birds and mammals—a rare collection. The scientific character and educational value of this collection is greatly enhanced by the attractive and realistic manner in which it is mounted. A miniature mountain and valley with rocks, trees, caves, and a stream of running water afford opportunities for mounting each specimen in some characteristic attitude or act, and the visitor feels that he is observing nature in reality. In the same building were the very instructive exhibits of the bureau of charities and correction, a portion of which are elsewhere separately mentioned.

The educational influence of the State exhibit of fine stock, farm products, methods and appliances of horticulture, machinery for the farm, the mine, and the manufactory can not fail to be the most helpful among her own citizens, as well as information to the multitude of visitors from other quarters.

In promoting the education of the historical sentiment the State was eminently successful. It furnished a large number of instructive articles to the colonial loan exhibit in the Government Building. Elsewhere relics were gathered, too numerous to mention. A model recalled the building in which Congress met in its retreat at York; the State Building by architecture, sculpture, and painting repeated something of history at every turn, while to the whole was fitly added the veritable Liberty Bell, cast in 1752, or twenty-four years before the Declaration of Independence was made, and bearing the inscription, "By order of the Province of Pennsylvania, in the statehouse of the city of Philadelphia, 1752. Proclaim liberty throughout all the land to all the inhabitants thereof."

#### MARYLAND.

The exhibit of Maryland education, which came as a unit before the board of judges, was separate in its installation. The visitor, as he approached the Johns Hopkins University alcove and surveyed its abundant evidences of scientific instruction and scientific research on a scale so large and in directions so numerous, was not prepared to learn the limited number of years it has been in existence. Fortunately, at the start the funds were large and the management had the wisdom and good fortune to secure the services of Daniel C. Gilman as president. Under his guidance came at once full form into the educational world—a university indeed. The evidences of this were so arranged in the exhibition as to be readily studied and to leave no



doubt of the comprehensiveness of the theory of its administration and of the effectual execution of that theory in practice. The country stood in great need of the opportunities it offered after the work of the American college is completed. Fortunately, it has furnished many American students what they otherwise would have gone to Europe to obtain. Wisely, the university has emphasized publication; this was well illustrated at the exhibition. The collection from the university was an illustration of the educational possibilities of the State in which its people may well take the profoundest interest. There is occasion for special remark in the extent to which the university has come to meet the demand of the country as indicated by the number of important historical and scientific associations which center around its officers. The public school system and the State normal school are still moving forward on the plans and under the inspiration given them by the Hon. M. A. Newell, LL.D., for twenty years their able, scholarly, and efficient superintendent. As would be expected, the schools at Baltimore, under Supt. Henry A. Wise, lead the State. The hand work from both the white and colored manual training schools received awards. The judges also gave awards to the primary grammar and high schools and City College of Baltimore, and the office of the State superintendent. Among the other institutions recognized by the judges were the Bryn Mawr school, the English-German school, the Woman's College, and the Girls' Latin school. In the State the number of Catholic schools which received awards was large. Among them, some of the most important were Rock Hill College and the Ammondale Normal School.

There was no exhibit from the Pratt Library or the Peabody Institution, having great educational influence in the city of Baltimore.

#### OHIO.

The legislators of this great State have never adequately taken hold of an exhibit from its schools. The credit won for its education is due to its educators. They led the way, did the work, and provided for its expenses. Since the passage of the Akron school law, so called, by which a small board of education was authorized to manage the schools of that city, Ohio has been much commended for its union or graded schools; but its country schools have not secured the legislation needful for their greatest efficiency. There should be legal assurance for better qualified teachers and better local supervision. Some of the country districts exerted themselves under the inspiration of Commissioner O. T. Corson, and by the dint of great effort of teachers and local officers and friends made important exhibits of great interest. Among those which deserved and received consideration from the board of judges were schools in the counties of Darke, Auglaize, Butler, Knox, Geauga, Hamilton, Stark, Tuscarawas, Ashland, and Clark. Some of the student work showed excellent methods and fidelity on the part of

teachers and pupils. There were specimens, too, of marked merit in the several subjects of instruction from towns like Gallion, Piqua, Norwalk, Sandusky, Middleton, Mansfield, Lancaster, and Hamilton. But the great strength of the public school exhibit was from the three cities, Columbus, Cleveland, and Cincinnati. These collections recalled not only the care and skill of those at present in charge, but the self-sacrificing labors of Lord, Stevenson, Hancock, Peaslee, Freese, Rickoff, and White. Some of the work in these cities it would be difficult to excel. It showed the mastery of the best principles and methods. What a triumph if all had come up to the standard of the best! All grades of work in these cities were heartily commended. A more general application of sound pedagogical principles would soon be apparent in results if the State would do its duty in providing normal training for its teachers. Ohio made little special effort to show the progress of manual training. What there was exhibited was of good quality. The exhibit from the manual training school of Toledo gave great satisfaction. This school is a part of the public school system and is located in a wing of the high school building. Manual training is formally assigned its place in the course of study. It conflicts with nothing and is fairly treated. Its exhibit was well installed and much of the time well explained. It afforded an opportunity to get a fair comparative estimate of the pedagogical value of this department of training, and made a strong argument in favor of its having a place in the public school system.

The technical school at Cincinnati is working on philosophical lines and if amply supported has an important future.

The exhibit of Wesleyan University called attention to this important Methodist institution and its great promise for the future. Oberlin College exhibit, composed of catalogues, photographs, students' work, and maps showing the location of its graduates in different parts of the world, called up its interesting history, the struggle of its worthy founders, the great work they did for Christian education, and pointed to the deserved recognition it has at last received in promoting the progress of the world. Oberlin led the way in admitting women to the same college instruction as men. Wilberforce University, founded and conducted by colored men for colored people, is aided by the State, but not under State direction. Its exhibition told the story of the trying conditions under which the institution arose in a State where slavery never existed, and illustrated the usefulness it has at last achieved for the colored people.

The illustrations in mathematics were a specially attractive feature in the exhibit in the institution for normal instruction at Ada.

The Catholic schools of the State gave a hearty response to the call of their church authorities and gained a number of awards.

## INDIANA.

The school exhibit of Indiana, under the supervision of Hon. W. N. Hailmann, showed a clear pedagogical conception of the system which the State has for a number of years been working out with intelligence. The publications of the students, the opportunity to know the school laws of the State, the growth of the system of education, the relation of district and high and normal schools to the State University and to Purdue University, which takes the place of a college of agriculture and mechanic arts, and the gradations from the kindergarten to the college or university, were readily understood. The plan, arrangement, and devices were excellent. It gave the impression that one had before him, in a fair measure of completeness, the characteristics of the country, village, and city schools of the State; it showed a State system the different parts of which came together in a way to give strength to each and to the whole.

The State superintendent, or chief executive officer of the system, is elected by the people every two years. Fortunately, he is sometimes reelected. He has general supervision of the administration of the system, its funds and revenues, the interpretation of the school law, and the reports to the governor and assembly of the State, and for this purpose compiles the statistics, visits schools, apportions revenues, and distributes the school laws.

The State board of education is composed of the governor, State superintendent, president of the State University, president of Purdue University, president of the State normal school, and the school superintendents of the three principal cities, Indianapolis, Evansville, and Terre Haute. It regulates the examinations for the State certificates and licenses, and attends to such other matters as may be assigned to it; and it supervises the adoption of the text-books.

The State is divided into counties, the counties into townships, or towns and cities.

Each county has a superintendent elected by the township trustees every two years. Fortunately, a considerable number are reelected, and some are continued in office a fair number of years, thus saving much friction and loss. The duties of the county superintendent are examining and securing teachers, holding county institutes, compiling school statistics, reporting to the State superintendent, and carrying out the directions given by him and the State board.

In the townships the people elect the school trustees every four years; in the town, the town board or city council appoint three trustees for three years. Their duties are the management of school property, levying local school taxes, the employment of teachers, holding township institutes, and reporting to county superintendent and commissioners.



School directors are elected by the patrons of each district for one year. Directors preside at school meetings, mediate between the people and trustees, care for the schoolhouse, provide fuel, and may exclude refractory pupils.

The growth of the educational interest was at first slow, but it finally developed into an effective system. The first constitution of the State required the general assembly to enact an efficient and general school law. The State had the benefit of the national educational grant of land. Ineffectual efforts were made to carry out its requirements. There was no supervision, State or county; administration was to be dependent upon the votes of the school district. The revised constitution required the establishment of a system equally open to all of school age, and required the election of a State superintendent to direct the organization and administration of the system.

The required law was enacted in 1852; this act contains the germs of the present system. After several revisions, a comprehensive act was passed in 1865, and, with amendments, constitutes the law of to-day.

There are two permanent school funds—the common school fund and the Congressional township fund. They may be increased, but they never can be diminished. Both school funds amount to \$7,454,632.41, and are derived (1) from the surplus revenue received from the United States in 1836, amounting to \$537,502.96; (2) from the bank-tax fund, amounting to \$80,000, that came from a tax on banks by the act of 1845; (3) from the saline fund, amounting to \$85,000, and arising from the sale of lands around salt springs; (4) from the sinking fund created in 1834, and amounting to \$3,904,783.22; (5) from the seminary fund, derived from the sale of county seminaries by the act of 1852, and amounting to \$100,000. The Congressional township fund arises from the sale of the sixteenth section, given to each township, in accordance with the ordinance of 1787 and under the act of 1816, amounting to \$2,532,223.18.

The generations to come can not too carefully keep in mind the confluence of influence which affords them the advantages of free education. There is also a contingent fund derived from fines and escheats, estrays, road sales, delinquent taxes, and sale of swamp lands granted by Congress in 1850, amounting to \$2,263,936.24. These sources of revenue, together with the income from the State school fund, yielded for the year \$7,845,674. By the reports it appears that something over this sum was expended, or a total of \$8,367,619.

*Common schools.*—In townships these embrace ungraded and graded elementary district schools and township high schools; in towns and cities kindergarten (children from 4 to 6), graded elementary schools, high schools, night schools (in cities of 3,000 or more inhabitants for persons from 14 to 30 years old), and manual training schools (in cities of 100,000 or more inhabitants—Indianapolis).

A course of study has been outlined by a committee of experienced educators and offered to the schools of the State as an aid to classification. In the course for the district school, the first, second, and third year grades of the course require each a year; the fourth grade, two years; the fifth grade, three years. High schools are known as "commissioned," those whose certificate admits to the university, and "noncommissioned," those from which pupils are not admitted to the university on the certificate of having taken their course. Commissioned high schools have a minimum course of three years, or twenty-seven months, and a longer course of four years, or thirty-six months. The exhibit was arranged to allow the study of the results of these courses.

The kindergarten work from Indianapolis and Laporte deserved the hearty commendation it received, especially that from the normal classes. These kindergartens furnish good examples for study. They are formed in a thorough understanding of both the principles and the methods of Froebel. The accuracy with which each gift was prepared in the Laporte collection, and the harmony of the whole, were to be expected from the training by Mrs. Hailmann.

The free kindergarten movement in Indianapolis is one of special mark. It is under the direction of an organization of ladies. The first president, Mrs. Peelle, wife of Hon. Stanton J. Peelle, once a member of Congress and now one of the judges of the United States Court of Claims, as a pioneer president, sacrificed her health in making the movement a success. Mrs. Eliza G. Wiley is now president. The association reports an attendance of 4,182 in all departments of its work. In addition to the kindergarten proper, it has a training school for kindergarten teachers; also a domestic training school in which kitchen garden is taught, and a variety of sloyd for boys and girls. Mothers' meetings are held and literary clubs encouraged.

The training school for kindergarten teachers, under Mrs. Eudora L. Hailmann, Laporte, occupies a building adjoining the residence. The principal lives with the students from three to four hours daily, working, playing, thinking, and discussing with them. The course of study is thorough and much educational literature is mastered. The aim of the school is to develop in the student full, rich womanhood as the indispensable condition of truly helpful guidance in the educational life of the home, kindergarten, and school.

The collections from all grades of the schools of Laporte and Indianapolis add to the high quality of the Indiana exhibit. In each collection the results of central working ideas are apparent. From Laporte one sees the fruit of the kindergarten in the higher grades; sentiment, so prominent in the German schools, manifests its presence—the sentiment which exalts the home and the patriotism which cherishes the institutions of freedom. The study of form, too, is prominent. In the Indianapolis collection there are many indications of the wise use made

of the study of nature. One sees that attention is given to the cultivation of both the reflective and the expressive faculties in reasonable proportion. The regard for principles and methods is characterized by marked freedom of choice. The work in manual training deserves special mention.

It was refreshing to come upon the work of district country schools in the county exhibits. These country schools, which furnish all the school training for so large a majority of the children of the land, on account of many hindrances, make small showing of their vast work. In Indiana they feel the power of the State system, and it was easier to bring into exhibition something of their work. The signs of the influence of the course of study provided by the State could be discovered here and there.

The specimens from Miss Della Brown's school in Marion County caught the eye of many an approving teacher.

Charts of the young people's reading circles and of the teachers' reading circles pointed to a most excellent influence of these organizations upon the reading of the young and of the teachers of the State.

The authorities of Purdue University, Hon. James H. Smart, LL. D., president, appreciated their opportunity and improved it. The exhibit was large, showing the several departments to advantage. Prof. W. W. Folwell fitly commended it, first, for excellence as a general polytechnic school, subdivided into departments, each well provided for in buildings, laboratories, apparatus, and other appliances of instruction, as shown by means of photographs, drawings, and blue prints, and by skillfully arranged charts; second, for the work of students, as shown by specimens of drawings and prints, sketches and illustrations, fine machine tools designed and made by students, wood carving, patterns, metal work, notebooks, and theses, all of high merit; third, for the idea and plan of the display itself—to exhibit the courses of study, the progressive steps of instruction, and the graded processes of work by means of a limited number of specimens suitably arranged, no effort being made to impose by mere mass of material; fourth, for the union of science and practice in the work of the institution.

The State schools for the blind, deaf, and feeble-minded—these specially interesting classes—all exhibit work of great merit, and have won favorable opinions for the provision made for their institution by the State. The emphasis placed upon training in useful industries and in conduct deserves hearty commendation.

The Girls' Classical School of Indianapolis made an exhibit that disclosed excellent system and training.

As was frequently observed, the student of this State educational exhibit, as step by step he discovered its merits, was not surprised that the educators of the State set out with a purpose to render Indiana's educational exhibit "the initial act of a new educational era in the school history of the State."



*Catholic schools.*—The Catholic schools in the State joined the other Catholic schools in their exhibit. There was a good evenness of merit in the elementary work. In addition to the usual branches, such as spelling, writing, drawing, reading, geography, grammar, physiology, history, and arithmetic, there was evidence of much attention to Christian Bible history, and to bookkeeping, business forms, type-writing, stenography, music, painting, needlework, and embroidery. Great care in preparation was manifest. The work of the higher grades bore the same marks of careful preparation in advanced mathematics, French, German, chemistry, physics, rhetoric, logic, the classics, and commercial law and literature. The diocese of Fort Wayne represented seventy schools. The exhibit of the Sisters of Providence from St. Mary's Institute, St. Marys, Vigo County, commanded special attention. It was not only large in amount and varied in character, but of superior quality. But the most imposing of the Catholic exhibits of the State was, as might be expected, under the auspices of the Congregation of the Holy Cross from the University of Notre Dame, Notre Dame. The students' work in letters and in manual training was effectively shown. There were twenty-six volumes of Notre Dame scholastics containing students' work in English composition, rhetoric, and belles-lettres, crayons and casts from life, application of drawing in wood and metal, specimens of books printed and published, painting and lithographs illustrating the growth of the university. Photography was used with special effect in setting forth bacteriology, microscopy, electrical engineering, the art schools, libraries, cabinets, lecture rooms, laboratories, department of natural history, school of law and music, the gymnasium, preparatory school of manual training, normal school, colleges, halls, and associations, social, athletic, and literary.

But the study of the historical collection was specially rewarded. It would require an extended catalogue to mention the articles exhibited connected with the history of the church, its marked events, its eminent officers, teachers, priests, bishops and archbishops, cardinals and popes.

#### ILLINOIS.

The State of Illinois, in recognition of the fact that the great Exhibition was on its soil and within the limits of its great metropolitan city, made a special exhibition of its own, erecting a building for the purpose, where the educational work was installed. This was a valuable exhibit in itself, including the common schools and the higher institutions of the State. Chicago enjoyed peculiar advantages. Visitors could not only study the plan of the city system and its work in the exhibition, but they could easily, from its intelligent and courteous officers, see the actual work in operation, the teachers, the pupils, buildings, grounds, all the conditions which make up the public school training of the children of the city of a million and half of people.

## CITY OF CHICAGO.

Hon. A. J. Lane, city superintendent of public instruction, under the Columbia educational exhibit gives an outline of the effort made to secure to the schools the greatest advantage from the possible influences to be exerted by the exhibition. It may be quoted as giving not only what was undertaken in Chicago, but as illustrating the plans undertaken elsewhere for a similar purpose. Of course, elsewhere there was no such proximity to the exhibition. He says:

## COLUMBIAN EDUCATIONAL EXHIBIT.

The year has been eventful to the children of Chicago, because they have been so fully acquainted with all the preparatory steps which have been taken to secure and inaugurate the greatest exposition of the arts and sciences, commerce and agriculture, and all the wonderful achievements of men which the world has ever witnessed.

At the beginning of the school year the board of education purchased for each school a set of readers entitled *The Story of Columbus*.

The children reviewed the history of Columbus and the discovery of America, prior to the public celebration of "Columbus Day" on October 21, 1892. A uniform programme of exercises, such as was used in all the schools of the United States, was followed in the Chicago schools, as follows:

## NATIONAL SCHOOL CELEBRATION.

*Columbus Days, October 19, 20, and 21, 1892.*

## PROGRAMME.

Reading the President's proclamation.	
Raising the flag.	
Salute to the flag and pledge, by the pupils:	
"I pledge allegiance to my flag and the Republic for which it stands; one nation, indivisible, with liberty and justice for all."	
Music—America .....	"My country, 'tis of thee."
Acknowledgment of God, in song or selected reading.	
Song .....	"Columbus Day."
Historical essays, readings, declamations, and patriotic songs, arranged by the teachers.	
Song .....	"Columbus."
Words by Joaquin Miller. Music arranged by O. Blackman.	
Address by a pupil .....	"The Meaning of the Four Centuries."
Published by Youth's Companion.	
Reading—By a pupil.	
Ode .....	"Columbia's Banner."
By Edna Dean Proctor.	
Song .....	"Flag of the Free."

This programme was extended, however, in many of the schools and embraced historical essays, patriotic songs, and short addresses from citizens.

The dedication of the building at Jackson Park afforded an opportunity for the school to fully study the aims and purposes of the Exposition. A map of the grounds, showing the landscape gardening, and the location, size, and general appearance of the buildings, was used. The location and character of the exhibits placed in the different buildings were quite generally studied. During May and June many of the pupils visited the Exposition and reported the results of their

observations. Quite generally the teachers used the exhibits to illustrate geography and history, and selected special reading to bring them into use, to make real the things which had been formerly known only by written descriptions. The teachers appreciated the fact that this was the opportunity of a lifetime for the pupils to study the products, manufactures, and inventions, the habits and characteristics of the nations of the earth.

At the beginning of the school year the principals were requested to preserve papers from the daily work of the pupils, which should be used in making a local exhibit in each school of what was done in the different grades. Cards for mounting the written paper and drawings were furnished. At the close of the school year, in June, exhibits were made in every school in Chicago and the parents were invited to come and inspect them.

The assistant superintendents were requested to select from the work of the different schools papers, maps, sketches, etc., which would most fairly represent in the Columbian Exposition the educational work of the Chicago schools.

The best representative work in the different subjects in each grade was selected and bound into volumes. These included papers on the different topics in each branch of study, arranged in the order given in the course of study and showing the process and methods used in developing them.

Volumes for each grade were prepared giving the work of whole classes. These included the principal's examinations for promotions in the grade work, the teacher's written reviews, class exercises in physiology, familiar science lessons, historical sketches, geographical descriptions, etc.

Single papers representing the most suggestive plan in the development of each subject of every grade were selected and mounted upon cards. Some were framed with glass for a wall exhibit, and others were placed in cabinets, each holding 33 cards or 132 papers.

In addition to the written work, the exhibits embraced drawings from every grade; pen and ink sketches illustrating historical events and science lessons; maps showing relief of countries, territorial growth, political divisions, distribution of products and other facts, in geography and history; illustrated work in the varied topics of arithmetic and forms of bookkeeping; paper folding in the primary grades; designing in colored papers showing harmony in colors and beauty in form; pencil, crayon, and water-color sketches of objects which were studied in science lessons; specimens of clay modeling of typical forms, a sphere, cylinder, square, pyramid, ovoid, etc.; fruits and leaves with other natural objects nearest these type forms; specimens of sewing as it was taught from the second to the fifth grades; and woodwork showing the various objects constructed and the principles applied in manual training in the primary and grammar grades.

The kindergartens presented a limited exhibit showing the different forms of construction work which children under 6 years of age are taught to do.

The high schools presented full exhibits of their work in free-hand, mechanical, and architectural drawing. There were sketches from casts, and water-color pictures of natural objects studied in science lessons, including microscopic drawings.

There were papers and sketches showing the progressive steps in biology, that is, zoology and botany, or first-year science; in physics and chemistry, with illustrated drawings showing experiments; also in history and literature. One volume of essays was furnished from each high school. One biological table, with a case having an outfit of instruments used in science teaching in high schools, was exhibited, showing the provision made by the board of education for the department of science.

Bookcases were also placed in the exhibit, with copies of all the text-books and supplemental reading books furnished by the board. Many papers, drawings, and constructed charts were arranged for the wall exhibit.

The English high and manual-training school presented a complete exhibit of the constructive work in wood and iron; sketches showing every step in mechanical and architectural drawing; in all, a very large and comprehensive exhibit of their work.



The evening schools were represented by a case containing thirty-three sketches of house plans and elevations, mechanical drawings, and geometric projections.

The whole exhibit was very complete and was a creditable presentation of the work done in the various departments of the school system of Chicago. The products are only the outward symbols of the real work which is done. The training of the mind, the unfolding of mental power, the development of right character, are the real work of the schools. These results are exhibited in the lives and characters of the millions of American citizens who not only produced the great Columbian Exposition but will visit it and assemble in the great congresses to discuss the problems of human progress.

Other cities more nearly equal in size vied with each other in presentation of school work. The collection from rural schools was specially commended. The collections from this State alone would make a valuable exhibit. Kindergarten principles were extensively illustrated. In portions of the State manual training is winning its way, and will become more and more a part of the public school system.

#### THE STATE NORMAL INSTRUCTION.

Two State institutions are doing a most important work for the advancement of the qualifications of the teachers, and thus for the benefit of the children of the State. The Southern Normal, founded the later of the two, is following closely after the Normal University at Normal. This was the first institution under the auspices of the State to give an uplift to the intelligence of its people. Gen. Charles E. Hovey, a graduate of Dartmouth College, who brought to the State experiences from Eastern schools, and was a teacher at Peoria before the State system had taken shape, was organizer and superintendent of public schools there. As editor of the Journal of Education and an officer of the State Educational Association he led in the formative measures adopted, especially in determining the action in the steps taken which led to the establishment of the university, became its first president, and stamped his impress on it for all time. It has done a high grade of pedagogical work, and its students are performing important services in Illinois and elsewhere throughout the country. Its present president, John W. Cook, has won a high position among the educators of the country, as did his predecessor, Dr. Hewitt.

The Public School Journal, published at Bloomington and edited by George P. Brown and E. S. Hewitt, received the following award:

For excellence: First, as a practical, progressive, stimulating educational journal, critical, but appreciative of serious effort toward improvement in every department of educational work; second, for its high standard of administration, supervision, and methods of teaching; third, for its philosophical treatment of all subjects, and for its sound pedagogical principle; fourth, for its literary work.

This State exhibit did not come under the consideration of the judges until late, but received numerous awards.

The exhibition of the university was a study in itself. To one observant of its origin and growth it was full of deep significance. The

pictures of its two presidents indicated that it was of recent foundation. Unfortunately for Illinois, there sprang up no great State university from the National Government grant for that purpose, as in Michigan, but the State was not without those thoughtful, forecasting citizens who sought such a boon for their Commonwealth. The so-called national agricultural college land grant furnished them the means and opportunity for the realization of their desires. Illinois received by this grant scrip for 480,000 acres. Fortunately, John M. Gregory, LL. D., who had been president of the college at Kalamazoo, Mich., and superintendent of schools in that State, was called to be the first president or regent, a man eminently fitted for the untried responsibility, both by nature and attainment. The institution was located May 8, 1867, in Champaign County. Work began March 2, 1868, when there were present, besides the regent, 3 professors and some 50 students, mostly from the vicinity. During the first term another instructor was added, and there was a total enrollment of 77 students, all young men. The attendance was small, but the plans were large. In the courses of study adopted May 8, 1867, six general departments were outlined, and under these were named fifteen courses of study. The extent to which the industries, as distinguished from the professions, were considered indicated a substantially new departure in State university work. The spirit of its founders is well indicated in the following words:

Let the State open wide, then, this Pierian fount of learning. Let her bid freely all her sons to the full and unfailing flow; those whose thirst and needs are little, to what they require; those whose thirst and capacities are large, to drink their fill. Let the university be worthy of the great State whose name it bears, worthy the grand and splendid industries it seeks to promote, and worthy of the great century in which we live.

In 1870 shop instruction was commenced; in the same year women were admitted. Since then they have constituted one-sixth to one-fifth of the total number of students. In 1875 the university led off for the country with a course in domestic science, in charge of Miss Allen, afterwards Mrs. Dr. J. M. Gregory. The pictures of grounds, buildings, and appliances, the work of students in the various departments of instruction and practice, and the literature freely furnished gave evidence of the great progress of the institution in fulfilling the purpose of its founders. The picture of the second president, Dr. Peabody, recalls the fidelity and ability with which he sought to promote the progress of the university. During his presidency he had won national recognition, and from which he came to superintend the important department of liberal arts in the great Exhibition. The total attendance in 1892-93 was 714, or 104 women and 610 men.

#### COOK COUNTY NORMAL SCHOOL.

This school, under Col. Francis W. Parker, has done most important work. Its exhibit, located in the assembly hall of the Children's Building, was much studied and received most hearty commendation from the best informed educators.



First. This is a purely professional school for the training of teachers. No one is admitted into the school unless they have had a four years' course in a high school or college. Connected with the normal department there is a practice school and kindergarten consisting of some 500 pupils.

Second. The pedagogical doctrine applied by the school is known under the name of "Concentration," or "The unification of studies." The education exhibit is the outcome of the application of this doctrine.

Third. The exhibit consisted of—

(1) One hundred volumes of bound work: (a) Work of the professional training class, consisting of plans for teaching, including drawings, paintings, and all the items of which a series of lessons consist; (b) about fifty volumes of books consisting of the work of pupils in the practice school from the first to the eighth grades, inclusive, showing the relation of science to art and to penmanship.

(2) The art work upon the walls consisted of paintings and drawings which sprang immediately from the science or history work. The theory of this method is that the art expression of the thought enhances intrinsic thought itself. These paintings and drawings were illustrations of science and history work, both from the practice school and the training class. About a hundred single unbound books were presented, being the work of individual pupils in the different subjects of science, history, and arithmetic. These books were written and the art illustrations appended to illustrate the written work.

(3) In geography two large relief maps of North America and South America, 42 by 62 inches, were shown. Also, maps drawn by a new method of map drawing, called chalk modeling. This method shows by one stroke of the crayon the vertical and horizontal forms of land surface. The principal charts were orographical maps of Greece, Spain, India, the Nile Basin, etc.

(4) The pasteboard and wood sloyd work of the school was shown as a feature in the school work. Also, a large amount of apparatus made by the children to illustrate elementary physics and chemistry.

The particular features of the work may be summed up as the application of the theory of concentration or the unification of studies, and the introduction of the conceptive modes of expression making, modeling, painting, and drawing. The honesty of the work was apparent. It was not touched by the teacher or worked over by the child.

#### EDUCATION OF WOMEN AS DOCTORS AND NURSES.

The education of women as doctors and nurses in Illinois afforded the opportunity for an interesting study of their work in the hospital, or the Illinois hospital, or the emergency hospital, as it was variously called. Those whose sufferings on the ground were relieved in it may well tell of it only as a hospital; here it is considered in its relation to education of women. Its plan embraced under one roof "a model



operating room with all appliances; a model diet kitchen fully equipped for hospital necessities; a model office and reception room; a section of a child's ward; a section of a woman's ward; and a private room for patients; in the latter every comfort and convenience and the best of care for any woman or child who may desire to apply for medical services, or who may be brought to the hospital. All three schools of medicine were represented in the attending physicians; a resident physician of each school being appointed for daily service. Volunteer physicians from each school of medicine were in attendance for varying periods during the continuance of the Fair. A head nurse was constantly in the building, and every training school in the State was to be represented some time during the six months, through one or more of its graduates, who served likewise for varying periods as circumstances might require.

Before passing, it should be noted that during the Fair 2,290 patients received treatment, while neither the number of visitors to "the show" portion of the building nor the inquiries answered can be estimated.

Here one learned that the movement in Illinois for the education of women as physicians began in 1870, in the Women's Hospital Medical College of Chicago, afterwards known as the Woman's Medical College of Chicago, and in 1892 secured universal recognition, and is now The Northwestern University Woman's Medical School, and past as well as future graduates of the school are made alumnae of the university. In this connection it is interesting to recall that—

In 1859 two women educated as physicians came to Chicago, and in spite of opposition and discouragements succeeded in establishing themselves in the practice of medicine. One by one others followed, until now about 310 are practicing medicine in Illinois, and the number is increasing. About 145 belong to the regular school of medicine, 130 to the homeopathic, and 35 to the eclectic. Nearly 210 are located within the present boundaries of Chicago, the remainder are scattered through the towns of the State. Reliable reports indicate that a large percentage are successful. The majority are in general practice, while a few are specialists, and many are doing surgical work to a greater or less extent. Almost all operations for the diseases of women are being performed by them, as well as many general surgical operations.

The Illinois Training School for Nurses, founded in 1880, did pioneer work, and was considered at the start as "preposterous" by some and "superfluous" by others.

One hundred and thirty nurses are now in the school, with a superintendent, two assistant superintendents, besides a matron and assistant matron at the Nurses' Home, No. 304 Honoré street. The home was built by the association with subscriptions from the friends of the institution and a legacy from Miss Phœbe Smith, of Chicago.

Through a bequest from John Crerar, the directors of the school have been enabled to establish a system of nursing at low rates for people of moderate means, the price being graduated from \$3 to \$10 a week, according to the income of the family. All money received for nursing

is added to the income of the fund, in order to supply as many families as possible.

Of the 337 graduates, 23 hold responsible positions, some as superintendents, some as matrons, others as head nurses in institutions and hospitals in Chicago and elsewhere; some are employed as Crerar nurses, a few have become physicians, but most of them are private nurses in Chicago and other cities.

In 1885 there followed the organization of the school for nurses connected with the Women and Children's Hospital, also that connected with St. Luke's Hospital, and in 1876 the Bethesda School; in 1888, the Rockford School; in 1889, the Lincoln Park School; in 1890, the Michael Reese Hospital School. The training school for city, home, and foreign missions is located at 114 Dearborn avenue. The Visiting Nurses' Association of Chicago, reorganized through the efforts of the Ethical Society in 1885, and again through the aid given by Miss Shumway in 1887 as a memorial to her mother, has already been generally recognized as an effective agency; indeed, its nurses in a single year have extended their care to 2,478 patients.

The number of Catholic schools of all grades in the State which participated in their exhibit was very large, and their merit was such as to secure many awards.

#### MICHIGAN.

If the educational exhibit of Michigan did not receive so many awards as those of other States of approximately the same size in respect to educational work it presented numerous points of special study. The student speedily found his interest concentrated on a few leading lines; first, the public school work; second, that of the normal schools; third, that of the college of agriculture; and fourth, and by no means least, that of the State University at Ann Arbor.

In Michigan what is known as the "State University" has reached its highest development in America.

Hon. Henry R. Pattengill, superintendent of public instruction, briefly summarizes the public school system of Michigan as follows:

First, the common schools.

Second, the high schools.

Third, the university, founded in 1837: Department of literature, science, and the arts; department of medicine and surgery; department of law; school of pharmacy; homeopathic medical college; college of dental surgery.

Fourth, the State normal school, Ypsilanti, 1852.

Fifth, the State Agricultural College, Lansing, 1855.

Sixth, the mining school, Houghton, 1885.

Seventh, schools for special classes: School for the Deaf, Flint, 1854; School for Dependent Children, Coldwater, 1874; School for the Blind, Lansing, 1880.

Eighth, reformatory schools: Industrial School for Boys, Lansing, 1856; Industrial Home for Girls, Adrian, 1881.

## The history of the university is, in brief:

Territory of Michigan organized by Congress, and one township of land given for a university.....	1805
Grant annulled, and two townships given.....	1826
Organization of first board of regents.....	June, 1837
University lands put on the market.....	1837
Legislative grant of \$100,000.....	1838
First class entered.....	1841
First class graduated.....	1845
Department of medicine and surgery organized.....	1850
Dr. Tappan appointed first president.....	1852
Board of regents made elective by the new State constitution.....	1852
Department of law organized.....	1859
School of pharmacy organized.....	1868
Women admitted (discussion begun, 1858).....	1870
Legislative appropriation of one-twentieth mill tax annually.....	1873
Homeopathic medical college organized.....	1875
College of dental surgery organized.....	1875
Legislative appropriation of one-sixth mill tax annually.....	1893

*Presidents.*

Henry Philip Tappan, D. D., LL. D.....	1852-1863
Erastus Otis Haven, D. D., LL. D.....	1863-1869
Henry Simmons Frieze, LL. D. (acting president).....	{ 1869-1871 1880-1882
James Burrill Angell, LL. D.....	1871-

*Ordinary annual income.*

From university fund.....	\$38,000
From one-sixth mill tax.....	188,000
From students' fees and other sources.....	144,000
	<hr/> 370,000

*Expenditures for buildings since 1887.*

About .....	\$350,000
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*Officers of instruction and government, 1892-93.*

Professors .....	56
Assistant professors and lecturers.....	30
Instructors and demonstrators.....	38
Assistants .....	41

*Total number of degrees conferred to December 31, 1892.*

Department of literature, science, and the arts:	
Ordinary degrees .....	2,870
Higher degrees in course .....	482
Higher degrees on examination.....	193
	<hr/> 3,545
Department of medicine and surgery:	
Degree of doctor of medicine.....	2,894
Department of law:	
Degree of bachelor of laws.....	4,484
Degree of master of laws.....	41
	<hr/> 4,525
School of pharmacy:	
Degree of pharmaceutical chemist.....	637
Degree of master of pharmacy.....	3
	<hr/> 640



Homeopathic medical college:	
Degree of doctor of medicine.....	282
Department of dentistry:	
Degree of doctor of dental surgery.....	465
Honorary degrees.....	98
	<hr/>
	12, 449
Deduct for cases where more than one degree has been conferred upon the same person.....	1, 075
	<hr/>
Total number of persons receiving degrees.....	11, 374

*Summary of students in attendance, 1892-93.*

Department of literature, science, and the arts:		
Graduate students.....	116	
Undergraduates.....	1, 375	
	<hr/>	1, 491
Department of medicine and surgery:		
Graduate students.....	3	
Undergraduates.....	342	
	<hr/>	345
Department of law:		
Graduate students.....	24	
Undergraduates.....	616	
	<hr/>	640
School of pharmacy:		
Graduate students.....	2	
Undergraduates.....	80	
	<hr/>	82
Homeopathic medical college:		
Graduate students.....	1	
Undergraduates.....	62	
	<hr/>	63
College of dental surgery:		
Graduate students.....	7	
Undergraduates.....	182	
	<hr/>	189
		<hr/>
		2, 810
Deduct for names counted more than once.....		30
		<hr/>
Total.....		2, 780

*Degrees conferred upon women, 1871-92.*

[Women first admitted to the university in 1870.]

Bachelor of arts, philosophy, science, or letters.....	367
Master of arts, philosophy, science, or letters.....	45
Doctor of philosophy, on examination.....	5
Doctor of medicine, department of medicine and surgery.....	287
Bachelor of laws.....	28
Pharmaceutical chemist.....	21
Doctor of medicine, homeopathic medical college.....	73
Doctor of dental surgery.....	26
Honorary.....	2
	<hr/>
	854

*Women in attendance in 1892-93.*

Department of literature, science, and the arts.....	514
Department of medicine and surgery.....	71
Department of law .....	2
School of pharmacy.....	6
Homeopathic medical college.....	14
College of dental surgery .....	7
	<hr/>
	614

Libraries: 84,000 volumes, 16,000 pamphlets.

Museums: Of natural history, Chinese civilization, chemistry and pharmacognosy, archæology and ethnology, fine arts and history, anatomy and pathology, and collections illustrating industrial arts.

The board of judges, apparently, were most attracted by the exhibitions from the State superintendent's office at Lansing, the State University, the agricultural college, and by the exhibitions from the public schools of Bay City, Saginaw, and Ann Arbor.

The exhibition of the university especially gave it appropriate rank among the institutions of its class.

Friends of the schools in the State could but regret some of the important omissions, and naturally asked, "Do not these omissions point to a certain inadequacy in the organization of the State system? If that system operated with equal efficiency in every part of the State, and in every grade of instruction, would not the response in such a movement as this be more complete, place by place and grade by grade?"

The report of the State superintendent for the current year, 1893, the fifty-seventh in the series for the State, is as usual a valuable document. From it a reasonable survey of the condition of education may be obtained, the attendance by localities and by grades, the number of teachers, the receipts and expenditures, and the many items usually contained in such reports. From it one can learn much in regard to the legal requirements regulating public schools, and the relation to the several public institutions to the system of public instruction.

One feature of the report is unique and of special interest, and that is a series of sketches of the ex-superintendents of public instruction for the State, together with portraits of each, beginning with Rev. Davis Pierce and coming down to and including Cortland P. Stebbins, ex-deputy superintendent.

The university is acknowledged to be the most conspicuous of State universities, and the normal school at Ypsilanti is justifying its foundation. The agricultural college was one of the first organized. The list of institutions incorporated but not sustained by the State contains colleges and academies of marked merit. The reformatory work by the State deserves special attention.

Remarkable as has been the influence of educators upon affairs in the United States, comparatively little attention has been paid to their personal history, in which would be found an explanation of the origin of many of the best things in our civilization.

It should be noted that of the \$8,000 expended on the educational exhibit of the State, only \$2,000 were appropriated by the legislature, and over \$4,000 were raised by penny contributions. It will be seen how great were the sacrifices of those who carried the exhibition through.

#### WISCONSIN.

Wisconsin is one of the States that sought, in connection with the educational exhibit, to give the widest, most permanent, and most elevating character to the influence of the occasion celebrated by the Columbian Exposition.

Hon. E. O. Wells, the State superintendent of schools, issued the Columbian circular, containing patriotic and historic selections for October 21, 1892, together with the proclamation of President Harrison issued in accordance with the resolution of Congress; also the proclamation of Governor Peck, in which he embodied the resolution offered by Hon. W. T. Harris, United States Commissioner of Education, and adopted by the department of superintendence of the National Educational Association at its meeting in Brooklyn, N. Y., in February, 1892. The circular was effective in arousing interest. Appropriate exercises were widely held. A large amount of valuable information took effect upon the thought of the people of the State. Especially were the children better prepared to understand the instructive occurrences connected with the Exposition.

Worthy of special attention is a volume of 720 pages, "published under the authority and by the direction of the State committee on the educational exhibit for Wisconsin, 1893," containing contributions from a large number of educators. It was edited by Prof. J. W. Stearns, of the State University, and editor of the School Journal, and specially promoted by Prof. William E. Anderson, who was for nine years superintendent of schools, Milwaukee, and who did so much to make effective the educational exhibit of the State. The volume is filled with valuable data. Much of it is written by those who took part in the events which they describe. It will be specially valuable to those who would study the educational progress of Wisconsin.

With this history in hand and the educational exhibit before us the student can hardly fail to gain a correct view of the progress and conditions of education in the Commonwealth.

Education began in a most primitive way under the Territorial organization. The State constitution has from the first required provision for education. The legislative and administrative experience under that requirement furnish most important lessons, some of them full of serious meaning.

The district, a subdivision of the town, as the smallest geographical and civil unit for school purposes, was imported into the State from New England before its evils had led to its rejection there. There the town was first the unit. The district or subdivision of the



town was adopted later, in an evil moment, and remained until its injurious effects compelled State after State to abolish district control and return to the town system. The damage done in Wisconsin can not be recounted. Prejudice is so strong that unequal taxation, poor schoolhouses, inferior teachers, lack of grading in schools, and unnecessary expenses are tolerated rather than to adopt the township system in accordance with the law of 1869, which allows towns to do so at their option, by vote. Comparatively few towns have availed themselves of this provision.

Centers of population have thus effective independent organizations and carry on their own administration and supervision, reporting to the State superintendent. The constitution adopted in 1848 required a State superintendent, and the legislation of the next year provided for town superintendents. The State superintendent is ex-officio a member of the board of university regents and of the normal school regents. His responsibilities are great. He has an assistant and clerical aid. His relations to all the parts of the State system have a tendency to give harmony and increased efficiency to the whole.

In 1860 a law was passed providing for county superintendents. The efficiency of the office has not always met expectations, especially when the salary has been too small to secure competent service, or when for any reason there is an incumbent who is not qualified for the important duties of the office. But, on the whole, the office has added greatly to the efficiency of the system and produced marked improvement in the schools in the last thirty years. Two counties, Dane and Rock, are reported to have each two superintendents. Some counties do not furnish stationery.

*High schools.*—The progress of grading, resulting in high schools, was slow at first, but the experiment, when tried, proved its wisdom. The first high school class in the State is said to have graduated at Racine December 24, 1857. The Milwaukee high school opened in January, 1868, with 128 pupils. In 1860 there were less than 50 graded schools in the State. The State Teachers' Association in 1871 recommended a course of study for graded schools and for public high schools. City and county superintendents took similar action in behalf of county ungraded schools in the following year. In 1875 the legislature, to encourage the establishment of free high schools, passed a law making an annual appropriation of \$25,000, of which each high school established might receive \$500 and an additional sum pro rata for the population united in this action.

To promote the best results the State superintendent proposed three full courses of study, two embracing four years, for cities of 6,000 population or over, and a third of three years for towns of less than 6,000 people. In 1892 these high schools had increased to 182, or 192 including the 10 not aided by the State.

The preparation of students in these schools for the State University began early to receive attention, but no special action was taken until

1870, when the State Teachers' Association recommended that graded schools prepare for admission to the normal school and that high schools prepare for admission to the university, on certificate, without examination. The next year the State superintendent accentuated this recommendation, and the year after it was enacted into a law by the legislature. There are now reported 85 schools in the State and 89 in other States from which students are received into the university at Madison without examination, on the certificate of the principal.

The State superintendent is provided with aid specially for inspecting high schools. In 1890 the State report of education declared the high schools the most potent factor in the educational system of the State. This is the very opposite of the situation generally in our country. Our secondary instruction has been confessedly the weakest point in our American system of schools.

A specially interesting fact has been brought out in the State report in connection with the financial condition of families sending pupils to the high school. Of 119 high schools reported it appeared that 6,369 children attended, representing 5,491 families. Of these families 2,732 were rated below \$1,000 worth of taxable property as assessed by the State. Those rated between \$1,000 and \$25,000 numbered 5,645. Only 216 families are rated above \$10,000. In other words, more than one-half the patrons of the high schools are assessed at less than \$1,000, more than three-fourths below \$2,500, and only 1 in 25 above \$10,000. The State superintendent adds, "The free high school is emphatically the school of the poor man and of those in moderate circumstances."

As was to be expected under the circumstances, the public school exhibit of the State was mainly from the graded school system, in which the high school work was prominent. Peshtigo was commended for excellence of system; the South Kaukauna high school, for methods fitted to develop reasoning powers; Green Bay, specially for early introduction of instruction in science; Little Chute, for general excellence; Racine, for simplicity and naturalness in all grades. The Milwaukee schools were commended by Miss Fredriksen, first, for comprehensive presentation of system, statistics, courses of study, and buildings; second, for good kindergarten work in clay, building, and tablet work; third, for good work in physiology and geography in all grades; fourth, for scientific work in high school; fifth, for mechanical drawing in high school; sixth, for practical manual training. The manual training school of Eau Claire received a special award.

*Normal schools.*—From the first the teacher was the center of all improvement in education in the State. Every friend of improvement looked to him. How could his qualifications be advanced? State superintendents constantly gave special attention to the answer of this question. Teachers' institutes, known as temporary normal schools, were early held, sometimes wholly at the expense of the teachers, aided by a few friends of education. The constitution of 1848 recognized normal schools, but there was lack of money for their organization. The



university sought to promote the advance of qualifications among teachers, but it lacked means. Chancellor Lothrop asked of the legislature an appropriation of \$2,000 to establish a professorship and to support a normal professor, "whose undivided time and energies should be devoted to the duties of his charge." This was not granted. Professor Read, however, delivered two courses of professional lectures in 1856 and 1857 on the art of teaching. Eighteen students attended in 1856 and 28 in 1857.

In 1857, after a struggle, two bills of quite opposite import resulted in the act for the encouragement of academies and normal schools, and set apart one-fourth of the income from the sale of swamp lands, and a board of normal school regents was created. The board did not establish separate normal schools, but aided institutions already established which adopted the prescribed normal course, and also allowed \$30 for each student pursuing that course. Excellent institutes formed normal classes, such as Lawrence University, Milton Academy, Allens Grove Academy, Beloit high school, Plattville Academy, Albion Academy, and Waupaca high school, but the plan did not work. The normal training was subordinated to common academic work, and the result desired was not attained. In 1856 Dr. Henry Barnard, the eminent educator, was elected by the regents of the university its chancellor, and by the normal school regents their agent. He remained in these positions and did his utmost to elevate the educational thought and effort of the State, devoting himself especially to improving the qualifications of teachers and the work of the public schools. The growth of intelligent sentiment was such that in 1865 the legislature provided a larger endowment for normal instruction in the State in distinctively normal schools. In 1869 the acts relating to normal teaching were codified.

February 28, 1866, the board of regents voted to locate normal schools at Whitewater and Plattville. At Plattville the local donation included the grounds and buildings of the academy, and that school opened October 9, 1866, with Charles H. Allen as principal. Mr. Allen was then in charge of the normal department of the university. The Whitewater school was dedicated April 21, 1864. Oliver Arey became principal. He had brought the high school of Buffalo, N. Y., to a marked degree of success and had had favorable experience as principal of the Albany normal school, in which Mr. Page, author of *Theory and Practice*, did his great work.

The growth of the normal school work deserves extended study. It has greatly improved in quality and increased in amount.

The fine schools located, respectively, at Plattville, Whitewater, Oshkosh, River Falls, and Milwaukee in 1890-1892 reported a total attendance in the normal department of 1,597—males, 498; females, 1,099. Two courses of study are pursued—one of two years, fitting teachers for the country schools, and one of three years, fitting teachers



for the higher work of the graded schools. A model school, or practice department, was attached to each school. Gradually students have required less in so-called academic studies, and been able to do more in pure pedagogical work. Since the opening of the first normal school, 1,568 have completed the course, 792 the advanced course, and 776 the elementary course. About one-third are men. Ninety-five per cent have taught. It is estimated that 10,000 of those who have attended these schools but have not graduated have taught in the common schools, thus disseminating something of their better methods. These schools have always stood for high moral character and thoroughness of instruction among teachers, with increasing specialization toward principles and improved methods of education. Kindergarten and manual training have been taken up cautiously.

The collective exhibit of these normal schools attracted deserved attention. It was commended by Judge Fry, first, for completeness as a distinct presentation of normal training; second, for the evidence of painstaking work on the part of the teachers, and intelligent effort on the part of the pupils, as seen in their practical criticism, methods of study, and indications of originality. The award to Plattville noted excellence of methods, results, especially in language, kindergarten, and child observation. That to Whitewater, first, the excellence of normal work in its entirety; second, the excellence of normal high professional aim; third, method of original work; fourth, pedagogical text-books by the faculty; fifth, good drawing. Special note was taken of the apparatus made by the pupils at River Falls.

Music in the Milwaukee school was specially mentioned.

All the schools shared in these excellencies.

*State University.*—It may be well to remember that Wisconsin was not erected into a separate Territory until 1836, and that it became a State in 1848. The first Territorial legislature met at Belmont, Iowa County, October 25, 1836. A law was passed protecting school lands, and an act establishing a university at Belmont. The trustees were authorized also to establish "colleges, academies, and schools dependent on the university." Twelve years passed before the university had an actual existence. Meantime Madison became the capital, and the university was located there, the regents purchasing 50 acres of land. Meantime, also, the legislature freely chartered colleges and academies. February 5, 1849, a preparatory school was organized under Prof. J. W. Sterling, whose connection with the university continued thirty-four years. But the first university class, so called, was formed August 4, 1850. The State did not give a dollar to the university before 1866, forgetting that the lands granted were given as a sacred trust for the maintenance and support of a university, and that the State should do the rest. The sum of \$104,339.42, by act of the legislature, was taken from the fund and applied to the erection of buildings. Be it remembered, for the honor of the State, that this was restored by law. The univer-

sity was meantime, however, so far crippled for funds for current teaching expenses.

Early after the act of Congress of 1862 making grants of land for colleges of agriculture and mechanic arts was passed, the State turned its portion over to the university, the moneys derived therefrom to be known as the agricultural college fund.

In 1866 a reorganization occurred. In the following year women were admitted. Normal instruction, which had been so long in mind, was formally provided for. A normal department was opened and 112 students entered, of whom 76 were women. In 1869 this department was enlarged into a female college. In 1870 the State gave \$50,000 for the erection of a hall for young ladies. In 1878 Hon. C. C. Washburn, once general, governor, and member of Congress, erected and equipped the observatory at his own expense.

In 1876 the tax of one-tenth of a mill on the dollar on the assessed valuation of taxable property was authorized for the benefit of the university. In 1883 this tax was increased to one-eighth of a mill. In 1891 a State tax of one-tenth of a mill was ordered levied for six years for the "erection and maintenance of buildings for the military, dairy, and law departments."

In 1885 the long struggling purpose to maintain a full normal professorship was realized in the establishment of the chair of the art and science of teaching. The very competent Prof. J. W. Stearns was elected. He had been professor in the Chicago University, now extinct. He had had special experience as principal of a Government normal school in Tucuman, in the Argentine Republic, and also for six years as principal of the normal school at Whitewater. He had also, by the State act of 1885, given annually thirty or forty public lectures in connection with teachers' institutes.

In 1888 a chair of agricultural physics was established; also a chair and laboratory of experimental and comparative psychology after the plan of the College of France. It comes into close relation to the normal schools by arranging two special normal courses. "Prelegal, premedical, and prejournalistic" courses were also established.

Farmers' institutes were undertaken in 1886; already 61 have been held in a single year, with an attendance of 30,000. In 1887 a summer school of four weeks for teachers was opened, offering twenty courses of instruction, which has already reached an attendance of 191. In 1892 the school of history, political science, and economics was created, and the distinguished Prof. R. S. Ely, of Johns Hopkins, placed in charge.

The thirteen years' presidency of John Bascom, LL. D., commencing in 1874, marked, it will be seen, great progress in the university, which has been continued along similar lines under the administration of Dr. T. C. Chamberlin and that of Dr. C. K. Adams, who comes to his respon-



sibility after rich experience as professor at Ann Arbor and president of Cornell University.

It may be said that the university is not only fast becoming a great university, but, in truth, the center of learning for the people of the State. The income of the university for the year ending June 30, 1892, is reported to be \$268,510.60. Tuition is free to the residents of the State.

The exhibit of the university was largely made up of photographs together with the record of changes published. The award of the judges could be appropriately given for progress and instructive changes in attendance, appropriations, courses of study, and results of instruction in the university, together with photographs of interior and exterior views.

For the entire educational exhibit of the State, Hon. J. H. Shiun could fitly recommend an award—first, for the evidence of good training from the common schools through the university; second, for excellent attainment of pupils in the elementary, secondary, college, and university instruction.

The State Teachers' Association, which exerted a most helpful influence upon the course of educational progress in the State, represented by Prof. W. E. Anderson, was adjudged an award for the completeness of its historical presentation and progress of instruction, the establishment of the university, normal schools, colleges, and other institutions of learning in the State.

*State institutions for special classes.*—Their exhibit was found joined with that of other institutions of this character.

I. A. Lapham called the attention of Hon. M. M. Strong, president of the council of the Territory, as early as 1843 to the duty of providing instruction to the deaf and blind. In 1848-49, Miss Wealthy Howes, a resident of Magnolia and a graduate of the New York Institution for the Deaf, began to teach Ariadne Cheseboro, a deaf girl, at her home, together with J. A. Dudley, a deaf boy. Mr. J. A. Mills, also from the New York school, took up the work for four months with six pupils.

April 19, 1852, the Wisconsin Institution for the Education of the Deaf and Dumb was incorporated, to be located near the village of Delavan. The present site is known as Phoenix Green, comprising 37 acres, of which 11 were donated by F. K. Phoenix. The school has an instructive history. The buildings were burned on September 16, 1870, and rebuilt, with improvements, by the State in 1880. The course of instruction is elementary, covering ten years, having advanced work to be done at the National College at Washington, where twenty have entered. Instruction is given in industries, both in the manual and oral methods. Nine hundred and twenty have shared in the advantages of the institution.

The establishment of the School for the Blind, at Janesville, followed a movement inaugurated by the citizens of that place the 27th of



August, 1849. The subscription was raised and a few pupils instructed. In February, 1850, the legislature chartered the Wisconsin Institution for the Blind. The growth of the institution is full of interest. In 1862 Superintendent Thomas H. Little announced three departments—literary, musical, and industrial. In 1878 kindergarten was introduced. In 1879 books printed for the blind, at Louisville, by the National Grant, began to come to the institution. In 1891-92 the school was graded to correspond with the graded schools of the State—"kindergarten, three primary, four grammar, and a four years' high school course." Piano tuning, typewriting, and housekeeping are taught. Attention is given to physical culture. The school is in session forty weeks each year. It is free to all blind children in the State, and, together with the school for the deaf and dumb, is regarded as a part of the State system of public instruction. The school is located—one main building—on 40 acres of land, on the south bank of Rock Creek, within the city limits. The officers, assistants, and pupils, October 1, 1892, numbered 120.

*The Phonological Institute.*—In June, 1878, a permanent organization of those speaking German, and especially interested in the oral method for the deaf, was effected under this name. January 20, 1879, it was incorporated with 120 members. For a time its proceedings and records were in the German language. The Ladies' Aid Society gave it special assistance. A normal department for the training of teachers in oral method was started, and in connection with it a private day school. Prof. Alexander Graham Bell became interested. Governor Rusk recommended legislation to improve the treatment and education of deaf-mutes. Professor Bell spent a couple of weeks explaining the measure to the members of the legislature. March 31, 1885, the bill became a law, by which was established what is now known as the Wisconsin system for the education of deaf-mutes. The State provided for the instruction of classes of deaf-mutes with the oral method, and appropriated \$100 for each pupil taught. There are now schools and classes as follows: One in Milwaukee, with 42 pupils; one in Wausau, with 5 pupils; one in La Crosse, with 8 pupils; another is about to be established in Morristown. The same course of study is pursued as in the day schools. The normal department of the Phonological Institute has trained 22 teachers by the oral method.

*German and English Seminary and Academy, Milwaukee.*—The exhibit of this institution attracted the attention of many special students. It very fitly received an award for excellence in drawing and especially in ideas of form and skill in casting. In fact the exhibit pointed to much that the award did not specify. Here work is done in accord with the most thorough German method, in both German and English, and is supported literally by Germans of wealth. The building is a model in lighting, heating, and construction generally. For natural science teaching, a museum and chemical laboratory are provided, while the

kindergarten, manual training department for boys, needle and fancy work department for girls, and the gymnastic department, afford excellent opportunities alike for mental and physical training. Here young ladies and gentlemen are fitted for teaching both German and English. The methods follow closely those of the German teachers' seminaries. Here, too, is permanently located the normal school of the North American German Union for the training of teachers of gymnastics.

*Downer College.*—This institution, named for its benefactor, is located at Fox Lake. It aims to give higher instruction to women. It is under the presidency of Miss Ellen C. Sabin, formerly superintendent of schools at Portland, Oreg. Downer College made a modest but effective exhibit, and received an award from the board of judges for general excellence, wise direction, and great promise.

The Spencerian Business College, Milwaukee, deserved the recognition among business colleges which it received for excellence of methods generally, but especially in stenography and typewriting.

*Catholic schools.*—The collections from the Catholic schools were found in the Catholic exhibit. Many participated, and a large proportion was recognized in the awards.

Not a few names preserve the memory of the first Catholic explorers and settlers. They early established schools. The State is now divided into dioceses, and they report 279 parochial schools. Of these, 140 are in the archdiocese of Milwaukee, 77 in the diocese of Green Bay, and 62 in the diocese of La Crosse. These schools enroll 44,669 children; 23,939, or nine tenths of all the Catholic children, being in the archdiocese of Milwaukee, 12,200 in the diocese of Green Bay, and 8,530 in that of La Crosse.

*Marquette College.*—This college, named for the eminent explorer, was chartered by the legislature in 1864. It had its beginnings in St. Aloysius Academy and St. Gall's Academy. The curriculum is the same as that of the other Jesuit colleges in the United States. It embraces two courses, the commercial and the classical. The commercial fills four years. The classical is more comprehensive, and is divided into two departments—the academic, filling three years of training in the elements of English and the classics, and the collegiate, filling also three years with higher studies. Catholic doctrine is given systematically throughout all the courses, but the study of German and French is optional. The method is that of the famous Ratio of Studiorum of the Society of Jesus, adapted to the present circumstances. The Jesuits, as a teaching body, do not change courses or methods with the change of teachers; courses and methods remain the same.

*Catholic Normal School of the Holy Family, and Pio Nono College, St. Francis, near Milwaukee.*—The special aim of this institution is the training of teachers for the Catholic parochial schools. Its imposing building was dedicated January 2, 1871. In 1892–93 over 100 students were enrolled. Here the American Cecilian Society was founded in 1873, for the cultivation of true ecclesiastical music.



*The Provincial Seminary of St. Francis of Sales.*—This institution, or theological seminary, for the training of the priesthood, dates back to efforts made in 1853. More than 600 priests, as well as distinguished bishops, received training here.

*St. John's Institute for Deaf-mutes.*—This school, located at St. Francis, near Milwaukee, was opened May 10, 1876. It furnishes one of the specially interesting features of Catholic education in the State. The majority in attendance are the children of the poor. For a time the oral method was employed, but it was finally given up for lack of time. A special feature is the training of the pupils in the manufacture of church furniture, altars, pulpits, and all kinds of carved work used on pulpits. Orders come in from various quarters. It has an excellent plant, and turns out from \$20,000 to \$30,000 worth of work annually. The usual instruction in English is given to boys and girls. Girls are also taught domestic economy.

The Catholic institutions in the State are generally reported without large endowments, and are therefore supported by much self-sacrificing effort. The large number of them which participated in the exhibition, and the fullness, variety, and excellence of their collections, gave evidence of their fidelity to the call of those who sought that there should be no pause in the progress of improved methods.

#### MINNESOTA.

The expert, studying the exhibition of education from this State soon saw indications of a closeness of relation and fitness of part to part which indicated system. There is little room for the waste arising either from overlapping or from lack of harmony. The College of Agriculture and Mechanic Arts is a part of the university. Their work, however it may differ in any respect, is a unit in purpose. In this, as in the saving of the university from its early wreck, or from the mistake in the use of its lands, the wise devotion and labor of Hon. John S. Pillsbury, as state senator, and governor during three terms, have borne most abundant fruit. Fortunately, he is still a laborious trustee. The university has had only two presidents since its reorganization, Hon. W. W. Folwell, LL. D., now an honored professor, and Hon. Cyrus Northrop, LL. D., its present able and efficient administrative officer. It is fast becoming one of our leading State universities in quality, breadth of work, and in attendance. Toward the university, with all its opportunities, the pupils in each center or part of the graded system find themselves passing naturally, without strain, grade by grade. The high schools have good courses and fill well their place in the system; they are well manned and are strong in the affections of the people. The normal schools are efficient, and take their place without a jar. Under the wise administration of the Hon. D. L. Keile, LL. D., the extension through the entire system of sound pedagogical principles has gone rapidly forward; in a few years no State should excel this in its appli-



cation to every detail of educational work. County supervision, as a rule, is efficient. Much attention has been given to buildings, Duluth claiming to excel in its building for the high school. St. Paul and Minneapolis, fortunately, have had able superintendents, who have held the work up to a high standard, and taken care to introduce good teachers.

Kindergartens are having a healthy growth, so also is manual training, without doing harm to instruction in other subjects. Libraries are beginning to do their work both for pupils and those who have passed beyond the school age. The board of judges, in addition to the merits they saw in the office of the State superintendent, and of the university, and of the several normal schools, pointed out the excellencies they saw in the exhibit from a considerable number of cities and towns, including Minneapolis, St. Paul, Duluth, Stillwater, Winona, Henderson, Richfield, and Redwing. An award was given to the School for the Feeble-Minded, at Faribault. Carlton College, under religious auspices, located at Northfield, participated in the exhibition and was awarded a diploma.

#### IOWA.

Anyone studying the Iowa educational exhibit would find it difficult to believe that it came from a State in which the legislature half a century ago took retrogressive action with regard to schools and abolished the office of State superintendent of instruction. There were, however, pioneers in the State who were ready to support schools before they were provided by law, and their spirit has prevailed and brought about the present system of public education, embracing elementary, secondary, and normal schools, schools for the blind, dumb, and feeble-minded, a college of agriculture and the mechanic arts, and a State university, the whole sustained by the people in accordance with the organic law of the State. Unfortunately, the unity of the entire system of instruction is not presented in the exhibition. Iowa, like her sister States, shared in the great educational land grants from the National Government. Her pioneers encountered the usual hardships. Many mistakes marked the early educational history. However, in 1856, Governor Grimes had the wisdom to recommend that a commission be appointed to revise the laws with regard to the lands and to schools. This was done, and Horace Mann, then president of Antioch College, and Amos Dean, of the Albany Law School and chancellor of the University of Iowa, and Mr. Bissel, of Dubuque, were named. Mr. Bissel was unable to act, and Mr. Mann and Mr. Dean did the work, and the result was the school law of 1858, which has done so much for education. So rapid was the progress of education from this date that it could be said of the public schools that "they were able to resist the shock of the civil war more successfully than any other interest." It is worth remembering that this law made each township a district; all residents, colored

as well as white, between the ages of 5 and 21, could attend school. The property of the State must educate the children of the State. Graded schools were continued, and each board of directors fixed the branches to be taught; a county superintendent was to examine teachers and visit schools; aid was provided for teachers' institutes; high schools were authorized; districts could purchase Webster's dictionary and libraries; the whole was brought under the supervision of a State executive school officer. In 1876 it was provided by law that no person "shall be deemed ineligible by reason of sex to any school office in the State," and women have since become school directors and superintendents. The map that shows the location of the high schools in the State gives good evidence of the strength and efficiency of the public school system. Teachers' institutes have done a great work in Iowa. Dr. J. L. Pickard conducted an institute in Dubuque as early as 1849. More or less normal training was furnished in colleges. Prof. S. N. Fellows became instructor in the normal department of the university in 1867, and the State normal school was opened under J. C. Gilchrist as principal September 14, 1876; his associates were N. W. Bartlett, A. M.; D. S. Wright, A. M.; Miss Frances L. Webster, and E. W. Burnham.

In 1893, under Homer H. Seerley, A. M., as president, the attendance reached 811. In 1858 the State provided for an agricultural college and appropriated \$10,000 for the purpose, but gave no further aid for six years. The national grant was accepted in 1862. The institution has not been marked by that intelligent and steady support which it deserves; the attendance, however, has advanced to about 300. The State University has grown out of the national university grant and the gift of saline lands. It was established by an act of the legislature approved February 25, 1847. It has experienced varied fortune. The several able presidents found their post beset with many difficulties. During the administration of President Pickard marked changes were effected, bringing the work of the university more in harmony with its great central idea. Dr. Pickard had great advantage in guiding these changes from his experience as a young man in the East, as principal for thirteen years of Plattsville Academy, Wisconsin; as superintendent of public instruction for four years for that State, and for thirteen years superintendent of Chicago public schools. Among the great changes made under his presidency may be mentioned the abolition of the preparatory department, the articulation of the high schools with the university, the increase of electives and of the work of several chairs, such as natural science and history. It has been described "as gratefully remembered by students as a period in their lives when they were environed by influences which tended to cause physical culture to seem good, intellectual enlargement to appear better, and highest character to be deemed best of all." Under C. A. Shaefer, president, the university is advancing along established lines, adding new attrac-

tions as opportunities offer. The university extension is receiving attention. Although the high schools have done a great work in secondary education in the State, institutions of this grade, under private direction, have been found useful and received very considerable support. Notable among them is Cedar Valley Seminary, founded in 1862, located at Osage; principal, Alonzo Abernathy, Ph. D., for four years the efficient superintendent of public instruction. Its attendance has reached over 200.

There are numerous denominational colleges. All have preparatory departments, nearly all of them admit women as students, and most of them have women in their faculties. The Baptists have three institutions—Burlington University, Central University, at Pella, and the Des Moines College. The Church of Christ (Christian) maintains Drake University, at Des Moines, which has reported an enrollment of 907 students. They also maintain Oskaloosa College. The Congregationalists have two colleges, one at Tabor and one at Grinnell. Tabor has maintained itself through a remarkable series of trials. The college has now five buildings and its prospect is improving. Iowa College was incorporated in 1847. Its first president, George F. Magoun, D. D., was elected in 1862, and entered formally upon his duties in 1865, and remained until 1884. Under his able presidency, in spite of the greatest hardships, the college continued to grow with a faculty increasing to 15 and the attendance to 350, and having enrolled altogether 4,000 students. Under President George A. Gates the attendance has advanced to 588. Among its alumni it names H. H. Belfield (1858), director of the Chicago Manual Training School; Irving J. Manatt (1869), consul at Athens, Greece, and previously chancellor of the University of Nebraska; Jesse Macy (1870), author of *Our Government*; Henry C. Adams (1874), professor in Michigan University and statistician of the Interstate Commerce Commission, and Albert Shaw (1879), American editor of the *Review of Reviews*. The Episcopalians have established Griswold College, at Davenport. Its real estate is already valued at \$325,000, and has a productive endowment of \$80,000. The Friends have two colleges—Penn College, at Oskaloosa, and Whittier College, at Salem. The Methodists have five institutions for superior instruction—Wesleyan University, at Mount Pleasant; Simpson College, at Indianola; the University of the Northwest, at Sioux City; Upper Iowa University, at Fayette, and Cornell College, so long under the presidency of Rev. W. F. King, D. D., LL. D., located at Mount Vernon. Bishop Haven said, "Never have I seen a lovelier landscape than that which stretches out from Mount Vernon." The college was founded by Dr. Bowman. Dr. King has been president since 1863, and the enrollment has advanced to 600 and over. The exhibition of the college at Chicago was substantial, instructive, and deserved the award which it received from the board of judges.



The United Brethren maintain Western College, at Toledo, which has 375 students. Amity College, undenominational, is located at College Springs. The Presbyterians maintain Cce College, at Cedar Rapids; Lenox College, at Hopkinton, and Parsons' College, located at Fairfield. Had all these institutions adequately participated in the exhibition much would have been added to its value and much instructive history would have been brought to public attention. The school statistics were presented in a very effective manner. A map drawn by a pupil of the Montezuma schools presented at a glance the location of each one of the 13,275 public schools of the State. There was also an interesting chart giving comparative statistics. The work of the State office was brought out with good effect. The showing of kindergarten work was small, but indicating that the idea is receiving favor among the teachers in many of the cities. Drawing is making good progress; nature studies apparently receive limited attention. The same is true of manual training.

The number of awards bestowed upon city schools was deservedly large. The school for the feeble minded received especial recognition. The collections from Catholic schools were found in the Catholic educational exhibit. In addition to the usual class work, they exhibited typewriting, business forms, music, and knitting, embroidery, and fancy work by girls. Mrs. F. Hutchinson's school at Cedar Rapids received an award for designs in silk, and Eliot's Business College at Burlington for bookkeeping, typewriting, and stenography.

#### MISSOURI.

The visitor to the educational exhibit of Missouri was fortunate if he had in hand the pamphlet entitled *The Educational System of Missouri*. True, it did not contain a description of some of the most important features exhibited, omitting as it did to give any specific information in regard to such most instructive collections as those from St. Louis and Kansas City, but it was in effect a key to the State system of education. It makes clear that the object so long sought by the most eminent educators of the State, a system crowned with an efficient university and grading down to the primary school is already substantially realized. The whole may be said to date back to the organic act of Congress by which the Territory of Missouri was in 1812 erected out of Louisiana, which provided that religion, morality, and knowledge being necessary to good government and the happiness of mankind, schools and the means of education shall be encouraged and provided for from the public lands of the United States in said Territory in such manner as Congress shall deem expedient. The gift of section 16 in every township followed. Fortunately, for a considerable number of years no sales were allowed. In 1831 the legislature granted the right to county courts to sell these lands and loan the proceeds. As a result, in some cases the lands and proceeds were well

husbanded, in others the lands sold at nominal prices and perhaps the income squandered. Out of the wreck, however, there remain \$3,370,369.90. Another fund, known as the county fund, was derived from the sale of swamp and overflowed lands, amounting to about 4,000,000 acres. This went through a similar experience of mismanagement, but now amounts to \$3,788,559.28. What was known as the State common school fund was derived from the surplus distributed from the United States Treasury in 1837 and from the sale of saline lands given by the United States Government. Thus it will be seen what a large patron the National Government was of public common school education in Missouri. A debt of gratitude is due to those who labored for the honest and efficient administration of these national gifts to education. Among the most valiant defenders of these funds was Hon. R. D. Shannon, State superintendent of instruction. The organization and administration from the university down is regulated by the State legislature. The university, under its scholarly and accomplished president, R. H. Jesse, LL. D., is advancing in efficiency in all its departments. It has already accomplished much for the lower grades of instruction by bringing into such close relations with itself 53 high schools scattered over the State that their graduates are admitted without examination to its courses in the academic department and the College of Agriculture and Mechanic Arts. The preparation of teachers for their important duties is provided for by a professor of the theory and practice of teaching in the university, by the normal training furnished in such cities as St. Louis and Kansas City, and by the normal schools at Kirksville, Warrensburg, and Cape Girardeau, for whites, and in Lincoln Institute, in Jefferson City, for blacks.

The entire exhibition of the State deserved careful study. The pupils' work from Harrisville, Nevada, and Mexico had points of excellence which deserved recognition, but the cities of St. Louis, with its population of 450,245, and Kansas City, with its population of 132,416, by the last census, crowned the State public school exhibit in point of excellence.

Both cities showed the results of philosophical system, part fitting part, and each part, either subject or grade, fitted to its plan, and adapted according to sound principles and by the best methods to do the work assigned it, and to help toward the great end in view.

The St. Louis system led the way, under the guidance of the practical and philosophical care of Supt. William T. Harris, and has continued its wise and effective course under the devoted and prudent guidance of Supt. E. H. Long.

Here, under the supervision of Dr. Harris, by the devoted and skillful efforts of Miss Blow, kindergarten was adopted into the public school system, and thus St. Louis was the pioneer in the movement which has led so many cities to make the kindergarten a part of the



public school programme. The high school, under Professor Soldan, is one of established merit. The normal training is of a high order.

Kansas City has been fortunate in the continued able and devoted supervision of J. M. Greenwood. If as a city it did not lead at the start, its schools have come to rank among the best. Merit is limited to no grade, but is found from the kindergarten to the high school. Here the use of the pen and pencil are introduced together, and the upright stroke in writing is well established.

There were reported in 1892 in attendance in public kindergartens in the State of Missouri 6,890 pupils, of whom 6,830 were in St. Louis.

#### ST. LOUIS MANUAL TRAINING SCHOOL.

A leaflet prepared by Prof. C. M. Woodward, its able director, gave the desired information. The St. Louis Manual Training School is a subdepartment of Washington University. Besides the usual college or literary department, the university contains six professional schools, all of high grade: Engineering, law, medicine, dentistry, fine arts, and a school of botany. There are three subdepartments: An academy for girls, a classical school for boys, and the manual training school. Graduates of the three last enter the undergraduate department (college and engineering school) as freshmen. This shows that the manual training school is a school of secondary grade.

The manual training school was organized to effect several ends:

(1) To furnish a broader and more appropriate foundation for higher technical education.

(2) To serve as a developing school where pupils may discover their innate capacities and aptitudes, whether in the direction of literature, science, engineering, or the practical arts while securing a liberal elementary training.

(3) To furnish those who look forward to industrial life with a suitable preparation.

(4) To stimulate and develop the whole boy by cultivating memory, taste, observation, invention, judgment, will, and habits of industry, circumspection, precision, and exact thought. It is thus seen that the manual training school is a school for general rather than for special education. It preserves all approved methods of promoting intellectual growth and vigor, but is not limited to them. While it adds a new culture, it enhances the value of old ones. It is not a trade school, nor a professional school, though it covers three years, the conditions of admission being substantially the same as for good high schools. The scheme of academic and manual work embraces five parallel lines, as follows:

(1) A course of pure mathematics, including arithmetic, algebra, and geometry.

(2) A course in science and applied mathematics, including elementary physics, commercial geography, botany, chemistry, natural philosophy, mensuration, and bookkeeping.



(3) A course in language and literature, including English grammar, spelling, rhetoric, composition, literature, history, and the elements of civics and political economy. Latin, French, and German are introduced as electives with a part of the English and science.

(4) A course in penmanship, free-hand and instrumental drawing.

(5) A course of tool instruction, including joinery, wood carving, wood turning, molding, pattern making, brazing, soldering, forging, and bench and machine work in metals.

There is no option as to the kind or extent of shopwork; no narrow selection is permitted. None of the work here exhibited, except the programmes and descriptive drawings, was made for this Fair. Selections were made from regular class work, and several specimens of each exercise are presented, so as to show that none of the work is exceptional. It is all student work. No skilled workers are employed to execute the difficult parts. Every piece of shopwork is made from a drawing. As a rule the drawings here seen belong to the boys who made them and must be returned to them.

#### NORTH DAKOTA.

The two great States, North and South Dakota, were carved out of the Territory for some years known as Dakota. There was a strong and active disposition to sell the lands intended for educational purposes, or in some way divert them during the Territorial period; but by the watchful care of friends in the Territory, aided by the watchfulness of the Bureau of Education at Washington, this was prevented, and these States, when organized, came into the inheritance of a large domain sacred to the education of youth. The income from this source has been found already helpful and will continue to be so while the honor of the State lasts.

The following is the statement furnished of lands assigned to educational purposes in North Dakota:

	Acres.
University.....	96, 000
Agricultural college .....	90, 000
Reform school .....	20, 000
School of mines.....	40, 000
State normal school.....	80, 000
School for the deaf.....	40, 000
School for the blind.....	30, 000
School for the feeble-minded .....	20, 000
Normal training school.....	20, 000
School of forestry .....	40, 000
Scientific school .....	40, 000
Public schools .....	2, 404, 000
Total.....	2, 950, 000

This State has added to the agricultural college grant, and the amount now named as belonging to the college is 150,000 acres.

The State was fortunate in having early as State superintendent of public instruction the Hon. John Ogden, who was prepared by long experience and wide observation to select for the people the best things in education. In preparing for the exhibition he sought that the schools should speak for themselves and tell the story "of their birth, purpose, and present progress." In addition to the usual communications by letter and circulars advising and stimulating effort for the exhibition, he spent some six weeks in actual organization and in inspecting the work to be sent forward from more than twenty of the leading schools in both city and country. He early sought to add from private means to the \$20,000 appropriated by the State. The plan of the exhibit was excellent; the views of buildings and grounds showed careful attention to pedagogical conditions; the programmes of study were constructed on the most improved principles; the work of the pupils, especially from the chief towns, indicated good methods. There was good kindergarten work, particularly from Fargo. Good drawing is already taught, as was seen in most of the city work, notably in that of Valley City and Jamestown among the smaller places. The high merit of work from the large cities, such as Fargo and Grand Forks, was manifest. Examples in the common branches from the remote schools and sparsely settled counties gave evidence of the extension of the advantages of the public school system to the most out-of-the-way pioneer settlements. What this signifies for these young States can not be described. Already the beneficial influences of the higher institutions of learning established is recognized. The agricultural college was opened to students on the 5th of January, 1892. It is located near Fargo, and its grounds and farm comprise 640 acres. Each county in the State is given one scholarship.

\*The two normal schools, one at Valley City and the other at Mayville, are doing promising work. The university, located at Grand Forks, was chartered by the Territorial legislature on the 27th of February, 1883. In 1884-85 the attendance was 79; in 1891-92, 343.

The character of the faculty is a guaranty of good pioneer work.

#### SOUTH DAKOTA.

This exhibition was specially promoted by the ladies of the State cooperating with its educators. Before the legislature made an appropriation the woman's commission had raised a considerable amount of money. Its effective installation was due to Mrs. E. P. Farr, of Pierre, an educated lady and an experienced teacher, who was one of the most industrious and persistent judges in Department L. Had all judges worked as faithfully, the task of those who did labor would have been far less exacting. Superintendent of Instruction J. W. Mauck devoted special attention to the exhibit, and deserves credit for its merit. It was comprehensive of the educational system of the State. The university set forth its plans in reports, catalogues, statistical charts, album of views, and a variety of students' work; the agricul-

tural college exhibited illustrative photographs; the normal school exhibited four volumes of work. The number of towns and districts that participated was large. Some of the centers of population gave evidence of having well-graded systems. Pupils' work from country districts gave evidence of great ability of the teachers, and of intelligent and earnest work on the part of pupils. Both kindergarten and manual training are beginning to receive attention. From some cities the drawing was in excellent taste. The large map showing the number and location of all school buildings of every kind, public, private, and denominational, as well as the large map showing the location and area of all school lands, with statistics, was especially full of promise for the future. The first schoolhouse in Dakota, in oil, was exhibited by Mrs. D. P. Ward. The awards given to the State were discriminating and were bestowed upon the State as a whole, upon the State University, upon the systems of some of the leading towns, and upon the common schools of two counties. The Catholic schools were included in their special exhibit, and several of them were recognized among the awards.

#### NEBRASKA.

The educational exhibit from this State had a close resemblance to that of others similarly situated; you were sure it was American. The efforts of the State superintendent in behalf of the exhibit was manifest, and received an award. All grades, including the university, were represented. Under President Canfield the university has enjoyed more peace and consequently been more prosperous. Its laboratory work was well brought out. In the public school collections, manual training was not so extensively represented proportionately as in some of the other States. Illustrative lessons were largely exhibited and full of interest, showing the intelligence, fidelity, and skill of the teachers, and often the invention of the pupils. The school collections of Omaha led, but others followed closely from York, Hastings, Stanton, Beatrice, Lancaster, Holdrege, Wyman, Grand Island, Parnell, and Nebraska City, and each received an award naming its points of excellence.

#### KANSAS.

The spirit of liberty, so characteristic of this State, has never failed to manifest interest in the education of the people. The schools of the State, as in other cases, were not all represented; but there was afforded a fair opportunity to study their characteristics. The effect of the superiority of individual teachers or officers, or of a local spirit, was seen here as elsewhere. One could not fail to recognize the influence of the proximity of so large a center as Kansas City, in Missouri, which is due in no small degree to the efficiency of the eminent educator, Hon. J. M. Greenwood, superintendent of instruction. From the first, there have been schools in the State at the very front in the use of all appli-



ances, methods, and principles. In some cases it is to be confessed that injury has been done by too frequent changes of officers and teachers.

The exhibit as a whole did the State credit. The methods of the kindergarten are by no means universal in the schools, but they have taken firm hold, and by a considerable number of teachers and officers are well understood and intelligently employed. From the kindergarten to the most advanced university work the State system is showing increasing steadiness and efficiency, whether there is under observation the university itself, or the college of agriculture, or the normal school, including the increasing of the number of high schools as well as those of a lower grade. Everywhere, as officer and teacher, or pupil, woman has her place. The several disseminating agencies under the State superintendent, aided by educational journalism, are carrying into every part of the commonwealth the best there is in education. The calamities which have overtaken industry have necessarily affected the school work. The board of judges, in their critical examination, granted diplomas to the State school office, State university, college of agriculture, normal school, and to a considerable number of towns, and to the rural schools of several counties.

#### COLORADO.

The visitor approaching the Colorado exhibit will recall the fact that the State was admitted to the Union in 1876, the year of the Centennial at Philadelphia.

The exhibit is one of a series that point to the increase in number of States in the few years which have elapsed since that Exposition. It affords great assurance to the patriotic statesman that these new States have laid, in the education of the people, a foundation for future order, prosperity, and greatness. Here, too, becomes apparent the care of the General Government. Each university, each college of agriculture and its experiment station has, by aid of grants from the National Government had a financial foundation at the start, to give assurance of success to the first feeble efforts after the organization of the State. The same is emphatically true of the common schools. The granting of the sixteenth section of land to the support of common schools, dating back to the ordinance of 1787, which applied to all the territory owned by the United States northwest of the Ohio, has been a most potent factor in the progress of the intelligence of the people in all the States formed since that date. True, a number of States mismanaged the great national beneficence, and lost much of the advantage it was intended to secure. The States more recently organized come into the possession of a magnificent domain set apart to common schools and universities, preserved, so far, intact, in no small measure by the vigilant efforts of the United States Bureau of Education, which spared no pains to resist every scheme for the perversion of this great grant, and did its utmost to quicken a local sentiment to enter upon its adminis-

tration well informed of the instructive experience of the States that had previously entered upon the use or abuse of this heritage. Indeed we must turn to the annual reports of the National Bureau of Education for the fullest annual data of the education of this vast region before its organization into States. There foreign students will find a solution of the puzzle which they encounter in the history of the education of the new States. In these reports they will learn of efforts which created the systems of education in these States and made them ready for efficiency upon the first entrance to statehood.

Colorado fitly suggests its growth of common schools by setting a model of its earliest district schoolhouse over against the exhibition of the improved architecture and conveniences of its most recent school structures, which were the admiration of so many visitors. The State system of education has in it elements well adapted to efficiency. Its supervision is provided (1) for the State, (2) for counties, (3) for cities or large centers of population. Good provision is made for local action. The State brings the different parts of the State activity in education into a fair measure of correlation or cooperation, viz, the common schools, normal schools, college of agriculture and mechanic arts, and the State University. Charters are granted the institutions of learning by the legislature, as in other States.

As Denver has outnumbered other cities of the State in population, so it has been called upon to lead in educational influence. Fortunately, it early secured Hon. Aaron Gove as the superintendent of its city schools. He had not only the love of the work to be done and the ability to do it, but he had a rare equipment. His is one of the names of eminence associated with the early years of the Normal University of Illinois, founded by Gen. C. E. Hovey. His experience as a Union officer and teacher added to his outfit. He believed that Denver and Colorado ought to have the best there is in education.

The exhibition gives good evidence of his wisdom and that of those who with him have done the work of laying the foundation of education in the State.

Hon. J. H. Shinn, superintendent of schools for Arkansas, commended in strong terms the State exhibit of Colorado for, first, the fine display of college and normal school work; second, the large display from the public schools; third, for careful provision for the complete education of all the children of the State; fourth, the sound pedagogy of the mass of the schools and especially those of Denver; fifth, for the manifestly careful supervision of the ex-State superintendent, Hon. Nathan B. Coy. The exhibit of the schools of Denver was made especially realistic by the aid of the stenographer and the phonograph. The stenographer gave an exact report, mistakes and all, of the course of exercises in a given grade or school. The phonograph preserved the exact tones of the voices of teachers in reading and music. The plans of schoolhouses, the principles and methods of organization, administration, and instruc-

tion were much commended. The exhibits of Greeley, Colorado Springs, Pueblo, Boulder, Longmont, and Leadville compare with Denver, or follow closely the lines of its success. The normal school at Greeley received strong commendation. The judge said that the exhibit deserved an award, first, for a large and varied collection, well installed, containing charts used as a device for showing the semiconcrete idea involved, the amount of knowledge gained, and the test of its assimilation; second, for solid work arranged by programmes from the kindergarten to the high school, setting forth the usefulness of the articles made, the accuracy of pupils in drawing, making drawings, and the working from them, together with essays by students on the tools and articles used, and the economies thereof; third, work in science after Agassiz, testing power to apprehend the object studied and to express in drawing as well as in words what was seen, together with the usual class work; fourth, programmes and work in (a) kindergarten, (b) English, (c) arithmetic and other studies; fifth, specimens of study, showing professional training in the laboratory method of investigating and reviewing each subject by clearness of thought, accuracy of expression, and excellence of elaboration in the history and philosophy of education, applied methods and psychology not limited to text-books, but studying self, others, literature, and history.

The school at Colorado Springs for blind and deaf is doing excellent work. The school of mines at Golden promises great usefulness in applying science to the great mining interests of the State.

The agricultural college at Fort Collins has already won a strong position by its helpfulness in solving the problem of agriculture peculiar to the State.

The State University at Boulder has laid good foundations, and promises to keep up with the increasing demands of the growing population.

Of the chartered institutions for superior instruction under private direction the university (Methodist) at Denver and the college (Congregational) at Colorado Springs are the most notable.

Connected with the educational exhibit of the State, several private exhibits have special merit; among them may be mentioned the so-called alphabet busy work, by Miss J. M. Mitchell, associating the phonetic sound with the form of the letter; the McDonald globe; the Carter desk easel to be used in teaching drawing, and the contour map of the State, by Messrs. Coy, Jackson, and Van Diest.

The Catholic schools of the State were represented in the Catholic exhibit and received much commendation for their general excellence, but especially for needlework and embroidery, typewriting, bookkeeping, Bible history, and music.



## ARKANSAS.

The educational exhibit of Arkansas represented the schools both of the white and the colored population, and in addition to the common schools the work of the State included that of the normal schools, the colleges of agriculture and mechanic arts, the university, and other institutions of superior instruction.

The public school system is administered under the legal enactments of the State. The chief executive officers are the State superintendent of public instruction, county examiners or superintendents, and city superintendents of schools.

The excellence of the State exhibit of education is especially due to the energy and zeal of Hon. Josiah H. Shinn, the State superintendent of public instruction. The State adopts for its motto in respect of education "A well-educated child is the best legacy possible to leave to the State."

The advance of instruction, especially in recent years, is full of encouragement. Better buildings are erected, better qualifications are required on the part of teachers, and more interest is shown by parents. In 1883 the expenditures reported for education were \$479,471, and in 1890, \$1,622,510.28; and in 1891 the school enrollment reached half a million. Careful provision is made for the education of the deaf, dumb, and blind. The schools in the larger towns and cities, especially in Pine Bluff, Helena, Batesville, Fort Smith, and Little Rock, deserve the high commendation so generally bestowed.

Separate schools are provided for the blacks and whites. The plant, the buildings, grounds, machinery, and other appliances for the Colored Industrial School at Pine Bluff have been selected with reference to the best and most recent standards.

## KENTUCKY.

In spite of the obstacles in the way of friends of education in this State, it made an exhibit of education honorable to themselves, honorable to the localities and institutions participating, and helpful to their work. The judges pointed out appropriately in their awards the excellence of the office of the superintendent, of the university at Lexington, and of the schools of Louisville, especially noting the free kindergarten and the manual training and high school and the public schools of Lexington and Frankfort; the text-books and work of Ephraim Smith, and the school work from the seminary under Dr. Sayre, both of Lexington. The work for both the feeble-minded and the blind in the State has for years attracted special attention, and both the school for feeble-minded at Frankfort and the American Printing House for the Blind, at Louisville, received awards. The number of Catholic institutions on which awards were bestowed was comparatively large, located in the principal towns — eight at Covington.

## WEST VIRGINIA.

This State, which constituted a part of Virginia until set off by itself during the civil war, did not make a full exhibit of its educational work, but set forth quite faithfully, as far as it went, the progress of the common schools for the education of its people. It consisted chiefly of pupils' work from the various grades, reports, photographs, and other articles illustrating educational conditions. The judges, in granting awards, pointed out special excellencies in the schools of Wheeling, Parkersburg, Charlestown, Fairmount, Martinsburg, Morgantown, and Mount Pleasant. The office of the State superintendent received an award. A unique feature was the collection from twenty-three villages. Educational progress is greatly indebted to the aid received from the Peabody fund.

## FLORIDA.

Considering the embarrassing circumstances, this State deserves great credit for its educational exhibit. Awards were given to collections from schools in the counties of Orange, Escambia, and Volusia, also for work from Palatka, and from both colored and white schools in Jacksonville and St. Augustine, and to the county normal, De Land, the Normal and Industrial College at Tallahassee, and to the office of State superintendent of schools. St. Joseph's Academy, at St. Augustine, was also awarded a medal.

## CATHOLIC SCHOOLS.

Catholic schools were the only ones, or chief ones, which exhibited from several States. From Alabama, three Catholic schools received awards; from Louisiana, Soulé's Commercial College, New Orleans, received an award, otherwise the awards were given to Catholic institutions of learning, of which 11 were located in New Orleans; from Mississippi, only Catholic schools exhibited, and received 7 awards, 3 of these being located at Natchez; from Tennessee, only the Ashe Art School, Memphis, Central Tennessee College, Nashville, under Methodist auspices, and St. Patrick's school, received awards, and notably the Christian Brothers College, Memphis, whose very worthy president, Brother Maurelian, was director of the Catholic exhibit; from Texas only Catholic schools exhibited, and 3 received awards; and from Vermont only Catholic instruction was exhibited, and St. Joseph's Academy received an award.

## ATLANTA UNIVERSITY.

This institution, conducted for the benefit of colored people, and aided by the American Missionary Association, takes its name from Atlanta, Ga., where it is located. Visitors and the board of judges agreed in their opinion of the great merits of the work done by it.

The exhibit gave ample evidence of good training, furnished in letters, in the sciences, and in handiwork. Moral and spiritual aims pervade every department of the institution.

THE FREEDMEN'S AID SOCIETY OF THE METHODIST EPISCOPAL  
CHURCH.

[Rev. J. C. Hartsell, secretary.]

This society, with the some forty schools and colleges under its supervision, about half of them devoted to colored education, exhibited work from Central College, Nashville, Tenn., and from Claflin University, South Carolina, and received for the same deserved recognition by the board of judges. The exhibit included the students' work in the several literary and scientific subjects taught, and specimens in manual training. The whole gave good evidence of the great work carried on by the society, and left no doubt of the capacity of the colored youth to receive education in both lines. It was unfortunate for those who came to the great exhibition to get a just view of the education now furnished in the country to a race who were so recently slaves that more of the education offered them both by public and private means was not represented. This great side of American education was too nearly left out of view.

HAMPTON INSTITUTE.

The exhibit from this institute, located at Hampton, Va., recalled its phenomenal history. It receives for the benefit of its colored students from Virginia a portion of that State's national grant in aid of agriculture, but is mostly sustained by benevolent friends. For a considerable time it has received Indians as well as negroes. Its methods with Indians are much the same as those at Carlisle, Pa. (which see). The exhibit fitly contained a portrait of Gen. S. C. Armstrong, made by one of the students. Its work with the negroes from the first has been most satisfactory. Its attendance is large and not limited to Virginia, and its students have gone out to all parts of the South. Great pains have been taken to follow them, whether Indians or negroes, and the results are most conclusive of the good work done. General Armstrong was the son of a missionary to the Hawaiian Islands, and grew up amid opportunities of seeing how a degraded people is to be elevated. He was a graduate of Williams College and an officer, and gained his rank in the Union Army. He was ready to be guided not by untried theories, but by the facts he encountered, by the condition of those whom he sought to educate. He was an enthusiast of a high order. His wisdom won approval by its practical results, both from those who favored and those who opposed the education of the colored people. The institution receives both sexes, and combines study with work by the hand. The greatest emphasis is placed upon moral training. The exhibition was one of extreme credit, and received hearty commendation from the board of judges, and from the hands of those who examined it.



## MONTANA AND UTAH.

This new State and this old Territory illustrate how school systems grow up in our Territories and become a fixed part of the administration of each State as it enters the Union. Each is aided by great land grants from the General Government, encouraging and requiring public instruction, graded from the first steps in learning up to the last work of the university, modified especially to meet the great demands of the agricultural and mechanical industries. Nowhere else are Commonwealths started with such an outfit; and these exhibits are evidence that there may be found in each localities and people that enter fully into the appreciation of the opportunities offered them. Their school law, administration, architecture, books, teachers, and the work of their pupils sometimes will not be found behind the best in the land. One is amazed to notice so often evidences of the knowledge of the best principles and methods shown in the most distant and out-of-the-way places. It may be fairly claimed that this result is largely due to the United States Bureau of Education, which communicates with all alike, wherever located, bringing each into the great educational family and sending to each the information it gains from all.

## CALIFORNIA.

The educational exhibit of California was separated from the main body of exhibits in the Liberal Arts Building; the State concentrated its efforts in several departments in the California Building. This was an imitation of one of the old missions found in the country when taken possession of by the United States. The building was unique and added to the variety and historic interest of the collection of State buildings, and furnished an excellent opportunity for the installation of the characteristic products of the State, and maps and pictures and a variety of objects telling the story of its marvelous growth, especially since the "gold fever" of '49, presenting views of its interesting vale, mountain, and water scenery, of its various productive agricultural lands, its vast vineyards, its noted ranches, its luxuriant orchards of orange, lemon, and other semitropical fruits, not omitting its giant trees. There were striking representations of the marvelous growth of its cities, and attractive pictures of its palatial homes and beautiful villas. Here and there pictures of its public institutions showed the quality of utility, combined with impressive architecture; a great variety of statistics was well set forth, and a large amount of valuable literature was distributed. In the midst of this great State display the philosophical student was not satisfied either with the opportunity offered for the display of education or with the extent to which the schools and higher institutions of instruction participated in it. These agencies, holding their causative relation to all other conditions in the State, were not adequately present in any representation. There

were, however, educational collections of merit as recognized both by casual visitors and the experts of the board of judges.

An award was given to the public schools of Oakland, San Jose, Temescal, San Diego, St. James, Pasadena, Santa Barbara County, the Cogswell Polytechnic College, and the Golden Gate Kindergarten of San Francisco, and a large number of Catholic institutions.

To estimate correctly the wisdom and value of the educational efforts in the State, there should be kept in mind the motives and conditions of its settlement—the varied sources of its population. The early rush of settlers was not for the purpose of finding relief from oppression or to found a great model State, but to get gain, to gather gold, with little thought beyond; but in this condition of affairs there were those who had other thoughts, who sought to lay foundations deep, broad, and sure for the social, civil, and religious institutions of liberty. They builded in the midst of overwhelming difficulties. They builded well.

In connection with educational beginnings no name is more deservedly conspicuous than that of John Swett, a native of New Hampshire, a born teacher, and favored with the best training in principles and methods. He was among the first teachers on the Coast, and with his legal friend has to be credited with the draft of the first school law enacted, which has operated ever since so efficiently in the establishment of schools and in promoting the intelligence and virtue of the people of the State. Its points of excellence and their results are most instructive.

Hon. J. W. Anderson, superintendent of public instruction, reports a school population of 293,897 between the ages of 5 and 17 years for the year 1892. Of these 213,359 attended public schools, 21,001 were in private schools, and 59,537 did not attend any school during the year. There is in the State a compulsory attendance law, and in explanation of these absences the State superintendent observes that many of those absent are between the ages of 5 and 6 years; others are employed at home; others are detained by ill health; some by preference are not started to school until 7 or 8, and some taught at home. It is interesting to note that of the children enumerated by the census 1,835 were negroes, 1,361 were Indians, and 1,364 were Chinese.

Subordinate to the State supervision there is supervision of instruction in the cities and larger towns, and county supervision in the rural sections of the State; 2,191 districts maintain schools over eight months, 30 districts less than six months.

Of the 238,095 pupils enrolled in public schools, 170,683 were in primary classes, 61,391 in grammar classes, and 6,021 in high schools. Of the 5,891 teachers employed 1,222 are males and 4,669 females. The average salary paid to female teachers is \$66.12 per month, and to male teachers \$82.96. Of the teachers 4,721 subscribe for some educational journal, and 1,134 are graduates of California State normal schools and 382 of other normal schools. The total valuation of school property is



reported to be \$15,193,996. Of this \$355,780 is in school apparatus, \$637,438 in school libraries, and \$14,200,778 in sites, houses, and furniture. The total annual expenditure is given as \$5,351,891.32, of which \$608,229.27 were paid for sites, buildings, and furniture, and the balance for apparatus, libraries, salaries, and contingent expenses. The State report for 1891-92 does not contain either the reports of the normal schools or that of the State University, which crowns the system of public instruction in the State. The teachers' institutes are an interesting feature of the school work of the State. The State superintendent reports having personally visited the teachers' institutes in 36 different counties, and that of the 5,991 teachers employed there were reported in attendance upon teachers' institutes 5,609.

The city of San Francisco, by far the largest in the State, in the report for 1894 shows a school census population of 68,390, a total valuation of school property of \$5,063,363.85, a total annual expenditure of \$889,009.32, a total enrollment of 44,349 youth, of whom 1,230 were in the two high schools, 571 in the commercial high school, 38,262 in the grammar schools, and 4,286 in the evening schools.

Hon. John Swett, the veteran educator, in closing his four years' administration as city superintendent of schools, remarked:

I have done my utmost to secure some method of appointing teachers better than that of personal favoritism or of political spoils.

In taking leave of the 900 teachers of the school department, some of whom have been my personal friends and coworkers for many years, and nearly one-half of whom were my pupils in the girls' high and normal schools, I do so with regret, as my retirement from office, in all probability, marks the end of my life work in teaching and in school supervision.

I wish also in closing this report to return my sincere thanks to the people of this city for their long-continued kindness to me, both in prosperity and adversity. Forty years ago I came here a young man, friendless and unknown. I secured an humble position as a teacher. Here I have devoted my youth, my manhood, and my advancing years to the public schools.

As teacher, as State superintendent of public instruction, as city superintendent of public schools, I have put into my work all my enthusiasm and all my energy. I love the city of my adoption. I am proud of her schools. I have a profound faith that a good system of public schools is essential to the preservation of good government. The public schools must be made the nurseries of intelligent patriotism. They must be jealously guarded against attack, and must be kept in line with the best of modern thought in education.

I am thankful that it has been my privilege to aid in laying the foundation of the public school system of this city and of the State of California.

The kindergarten display of California was a special object of attraction. The prominence of the kindergarten on the Pacific Coast is due especially to Mrs. Sarah B. Cooper, the president of the Golden Gate Kindergarten Association, under whose auspices nearly half a million of dollars have been bestowed, by private beneficence, upon this supremely important feature of education in San Francisco.

Mrs. Cooper is a lady of rare native ability, of unusually scholarly attainments, an eloquent speaker, whose life is consecrated to the



service of others. Her efforts for the uplifting of all conditions and classes of society accord with Christian principles and methods. She has received no compensation for her continued and untiring efforts in the promotion of kindergarten training. Her reports are prized wherever there is interest in this important subject. She teaches a Bible class which has sometimes reached an attendance of 700, and has been a most important auxiliary in her great labors.

Some incidents in the introduction of the kindergarten to the Pacific Coast are worthy of note. The call reached the East for a kindergarten on this coast. By the aid of the Bureau of Education Miss Emma Marwedale, a lady of German descent, peculiarly devoted to child training, responded. Prof. Felix Adler, in an address in San Francisco, deeply impressed the importance of kindergarten. Miss Kate Smith, now the well-known authoress Mrs. Kate Wiggin, received training from Miss Marwedale, and began teaching kindergarten in San Francisco, perfecting herself in kindergarten methods by improving other opportunities. Her sister, Miss Nora Smith, joined her in these efforts, and has continued in this important service. Mrs. Sarah B. Cooper, who was employed many years by the United States Bureau of Education as its agent in securing information on the Coast, visited one of these kindergartens, and at sight apprehended its revelation of possibilities of good for the child, and immediately began her efforts in this behalf, which have been crowned with unparalleled results. Miss Hattie Cooper is her secretary and special assistant.

This exhibit at Chicago consisted of large books of work beautifully bound, the hand work of little children. The photographs of over 3,000 children were taken in groups, the different nationalities being strongly brought out, including the American, Irish, Spanish, Italian, Scandinavian, and African races. Children possessing striking characteristics were taken separately. It was constantly remarked by visitors who saw these pictures that California children seemed to be both healthy and handsome. All these pictures were tastefully framed and lettered, indicating the different schools, ages of children, etc. These are the Stanford, Hearst, Helping Hand, Lux Potter, Lester Norris, Pacific, Pope, Emily P. Walker, Hazel Montgomery, Willard, Emily Faithful, Two Friends, Potrero, Lulu Shattuck, Pearl Dowda, Joseph Rosenberg, William N. Steuben, Sarah H. Congdon, Osgood and Grace, Produce Exchange, Merchants', Insurance, Attorneys', Real Estate, Mayfield, and Menlo Park kindergartens—thirty-eight in all in which there have been enrolled 18,126 children.

Over 3,000 children are thus grouped, and California will have good reason to be proud of the healthy, hearty, intelligent-looking little folks at the World's Columbian Exposition. Miss Martha Philip, an amateur photographer of fine taste, has been taking these pictures for several months. She has worked *con amore*, as is evident from beautiful and artistic work. The interiors of some of the kindergartens are

exceedingly well done, notably the Lester Norris and Stanford Memorial kindergartens.

Two exquisite circular charts, very large in size, designed by Miss Anna M. Stovall, the trainer of the Golden Gate Normal School, have called forth warm encomiums from art connoisseurs for their artistic beauty and originality of design. One is called "The Love Chart," and illustrates the mother love, beginning with the animal creation and rising in its development until it reaches all that is highest and best in human life. The other is a "Time Chart," representing the divisions of time for daily work and rest, unfolding into the larger divisions of weeks and months, the completed circle expanding into various seasons, which have been beautifully illuminated and illustrated by the artistic hand of Miss Helen T. Bacon, a teacher of the Golden Gate Association, whose fine talent is well known in San Francisco.

In addition to this there are several thousand copies of the Thirteenth Annual Report—a World's Fair edition—together with a like number of a handsome pamphlet entitled *Symmetrical Outlines of Development and Training*. This latter is a valuable work, especially prepared for the Golden Gate Association by Prof. C. H. McGrew, president of the Summer School of Methods of San Jose. These constitute a valuable feature of the exhibit.

The exhibit of the Catholic schools of California was to be found in the Catholic school exhibit in the Liberal Arts Building. The Catholic societies which planted the early missions in the region, when the territory became a part of the United States retained their lands and properties, and in some cases these turned out of great value, and have furnished them large means for prosecuting with efficiency their educational work. The dignitaries of the church and the teachers and pupils, appreciating the opportunity, took a great interest in preparing for the exhibition.

The success of their efforts is evidenced by the attention their several collections commanded at the exhibition and the large number of awards bestowed by the judges. All grades of instruction, from the kindergarten to the university, were represented. The variety was very great, both in hand work and in letters. The girls showed great skill, especially with the needle; some of the embroidery was exquisite.

#### OREGON.

There was no little surprise at the merit of the educational exhibit from Oregon. Oregon is less visited and less known outside of its own borders than California. Not a few Americans and many foreigners did not anticipate evidences of so promising educational work from a State about which they knew so little. Its alcove in the Liberal Arts Building was well filled. The early management of its educational lands and funds did not preserve them in their integrity, and the benefits



now derived from these sources are not so large as the age of the State might lead one to expect. It has, however, the university, the agricultural college, and the common schools, aided by the national grants. As the mistakes of the past are noted, not a few will recall the efforts of Rev. George Atkinson, D. D., and others to have them corrected. The exhibit, as in so many other cases, was prepared in no small degree by the sacrifice and enterprise of leading educators, teachers, and their friends.

The effort to secure the exhibit began as early as December, 1891, and was under the direction of a committee of which I. W. Pratt, superintendent of schools of Portland, was chairman, and Prof. D. J. Hawthorn, of the State University, was secretary. Its preparation had a wholesome, stimulating, and patriotic effect upon the schools. As might be expected, Portland led with its 200 teachers and 20,000 children. The excellence of its high school building attracted special attention. Considerable slate work was photographed and much observed. The collections from Salem, Ashland, Albany, Astoria, Jacksonville, and Eugene did their teachers and pupils great credit, giving good evidence of the qualification of teachers and the faithful efforts of pupils. There were good drawings, good penmanship, and good specimens in the various other subjects taught. The college of agriculture, the State University crowning the public system of education, and the university at Willamette, under Methodist auspices, illustrated what is done for higher education in the State. It was unfortunate for the early history of Oregon that the office of the superintendent of schools was joined with that of the governor at the first and so remained until 1873. Since these duties have been intrusted to a separate officer the progress of education has been much more satisfactory.

#### WASHINGTON.

This is one of the States more recently admitted into the Union. Its educational exhibit was in its own unique building, and did not come under the attention of the board of judges until near the close of the Exposition. A visitor who entered the building, so as first to gain an idea of the educational collections, and thus to have in mind as he advanced the foundations so laid for the intelligence of the people of the State who are to enter into the possession of its great natural advantages, was quite ready to foretell for it a great future. Unfortunately, under Territorial management the first university grant in a sense disappeared, but by the generosity of the National Government Washington has come in as a State for the usual patrimony of land grants for educational purposes. The judges gave awards for the schools of Tacoma, Spokane, Pullman, Olympia, and Seattle. The award to the State office specified general excellence of work, including good exhibits from rural districts; valuable statistical charts and meritorious classification. The exhibit consisted of drawings and other



pupils' work from all grades; also charts and maps in geography, bird's-eye view maps, photographs showing physical culture, exercises, and buildings; specimens of soap carving, clay models, work in science, and statistical charts.

#### EDUCATION AND THE GOVERNMENT EXHIBIT.

The building in which the Government exhibit was installed had a floor space of 157,500 square feet and in the galleries 33,500 square feet, or a total of 191,000 square feet of floor space. There were added four auxiliary structures, specially adapted to the exhibits of the Naval Observatory, the United States Army Medical Department, and of the Weather Bureau, and Indian Bureau, respectively.

Against the opposition of not a few the Government of the United States has taken part as a separate agency in a series of exhibitions. Some of these opponents may ask, What has the Government exhibit to do with education? The reply should be made known in all its borders, that its exhibit should educate the people in what the Government is and what it does, that they may understand it and love it, and be ready intelligently to defend it from force within and without.

The person who has traveled in this country and foreign lands can not fail to observe how much more is done by governments there than here to entertain the people and make them familiar with its beneficences. In international exhibitions other forms of government, such as imperial and monarchial, are brought in direct comparison with ours. Republican government in a sense is put on trial. Can it do this better than other forms of government? Is it more intelligent or honest? Does it serve the people better? Are they under it more free, intelligent, orderly, and happy? Courtesy may not allow these questions to be asked audibly in our presence, but are they not natural and likely to be revolving in the mind of every thoughtful visitor? In this view any infelicity in the action of Congress which makes a law not adapted to its purpose, or any act on the part of the administration of the exhibit which defeats its best operation—its attainment of the end in view—becomes a ground for preferring other forms of government in which the people have less participation.

France did not participate in the scheme of awards at Chicago. This led to many criticisms upon that Republic, when in fact on closer inquiry it may turn out to be due to the whim of a particular commissioner. It would be the part of wisdom if errors either in legislation or administration in any exhibition by a government could be pointed out for its avoidance.

One thing which crippled the result of this Government exhibit should not be forgotten. No other building containing exhibits affording lessons on subjects at once so important, so varied, or so numerous gave out so few explanatory documents. This is said to be due not to

the officers in charge of the Government exhibit, but to the rules imposed upon them by the general management of the Columbian Exhibition.

In no other building was the logic of arrangement so excellent. Several of the departments, by pictures and various presentations, carried the thought of the observer through there in their history from the foundation of the Government to the present time. Never had so many of our citizens the opportunity of such object lessons in our history. Here were the Presidents and Cabinet officers and others who had contributed to the happiness of our people, the growth and form of our institutions, and the glory of our flag in peace and in war. How small were the beginnings! How vast and mighty the results!

The State Department told the story of our relations to other governments; the Treasury, of our finances and of the work of the several great bureaus under its direction; the War and Navy, of our preparations for internal and external defense; the Department of Justice recalled the system of courts by which even-handed justice is meted out through the land, crowned by the Supreme Court of the United States, than which there is no superior among the nations of the earth; the Department of Agriculture disclosed the aid the Government seeks to afford the great body of people directly interested in the tilling of the soil. What a revelation was made of the application of science to their various interests! The Post-Office Department, to which President Grant was fond of pointing as a great educator of the people, illustrated its beneficent methods of handling their communications with each other, whether in regions near or remote, barren or productive, semitropical or arctic, by a post-office in actual operation, and by a still exhibit of its appliances for transportation by land and water, in cars, steamships, on horseback, or by dog trains, or on the back of the weary messenger; the Interior Department told the story of lands and patents—but the Commissioner of Patents did not allow that exhibit of the inventive genius of the country to be submitted to the examination of the board of judges—of the Indians, railroads, and of various beneficent institutions in the District of Columbia; and of the census of the people, and of the condition of the several Territories reporting to it; and of the Bureau of Education, by far the most influential office of education in the world. How manifest everywhere the results of science in all its forms.

Clearly here might the visitor say, "Here is the vanguard of the world's welfare." Looking to the exhibits of governments extremely monarchical in form, you find the presence of science in its most advanced results; but it is there in the naval and military service or civil service for the efficiency of that service, and with little or no reference to its dissemination among the people for their enlightenment and comfort; whereas science is made to do its best for our Government service in different forms—it is everywhere compelled to have constant



direct reference to the people; everywhere its progress and all its information are reported to them and made subservient to their demands, to their progress and happiness in untold forms and ways. How many bureaus are the very embodiments of the agencies which keep scientific research on the alert and at the front in lines beyond numeration. Here especially the Smithsonian, that great institution for the dissemination of knowledge among mankind, is present in most effective form.

In no exhibition on the ground is the space more crowded; old and young, in every condition that can move about by themselves or by the aid of others and observe, crowd each other in eager inspection of the numerous objects of natural history and human conditions. The whole is arranged with due regard to two great fundamental conditions of instruction—the historical and comparative. Here is the origin, here are the several steps of progress, and here are the opportunities for comparison. The collections of the Smithsonian and the National Museum are united. Fortunately they are under the direction of Dr. G. Brown Goode, who brings to their organization and installation the experience of so many exhibitions. In the department of arts and industries there were various subdivisions in the collections: Fisheries, naval models, including the *Sallie Constant* and the *Mayflower*, animal products, fishes and textiles, foods, musical instruments, costumes, ceramics, historical collections, graphic arts (Professor Roose, a German expert, declares this collection unique, and says probably it stands alone in the world), materia medica, department of ethnology, prehistoric anthropology, oriental antiquities, religious ceremonials, American aboriginal pottery, department of mammals, of birds, birds' eggs, reptiles, etc.; fishes, vertebrate fossils, mollusks, insects, marine invertebrates, comparative anatomy, including homologies, general and special, such as the mounted skeleton of the man and horse, the skull and teeth of the horse, domestic; numerous composition of the human body, and this on to the end, of which even the instructive enumeration is here impossible. The whole was so distinctly labeled as to make it especially intelligible. How much teachers of the country carried away for use in schools no one can tell. No one can examine this vast exhibit without feeling how faithfully the purpose of the founder of the Smithsonian is being carried out. The colonial collections and the representatives of conditions of life in the other American Republics added greatly to the interest of the building.

The Indian Office illustrated its school work among the Indians in a building specially prepared for the purpose. Here representatives of different Indian schools, teachers and pupils, followed each other in illustrating their school exercises in daily operation; here were also many articles connected with Indian life.

The small space assigned to the Bureau of Education was the center of educational study by experts in education, both American and foreign. Here were its publications, reports, annual and special, its cir-



culars of information, and bulletins, covering all phases of education in all quarters of the globe, giving in the form of statistical tables graphic and descriptive text, together with articles by the ablest writers on education. Here was information for the student of education to be found nowhere else in the exhibition; showing the office to be a veritable educational exchange for the special benefit of the United States indeed; while drawing its information so largely from the United States, it also gathers all of value from other lands, and is responsive to the inquiries of all visitors. By the aid of the American Library Association, represented by Melvil Dewey, A. M., of Albany, N. Y., secretary of the board of regents for that State and State librarian, the library as an educational agency, supplemental and helpful, to all instructive, was very fully represented. Here was a model library of 5,000 volumes, installed in the modern stack system of shelves; here was library architecture, furniture, binding, indexing, cataloguing, and administration complete, together with a person in charge to answer inquiries. Secondary schools were represented by photographs, catalogues, and reports; colleges and universities were shown by photographs and catalogues; educational periodicals in great variety; school architectures, exteriors and interiors; in school furniture, specimens and models showing its growth; school apparatus, etc., including models for illustrating complete methods; school superintendents, as set forth in State and local reports; the school, as seen in operation in photographs; school savings banks, documents illustrating their methods and progress; time schedules, including mechanical appliance used in the University of Kansas in arranging hours for recitations, lectures, etc.

The Alaska public schools, which have been under the Bureau from the first as organized by Rev. Sheldon Jackson, D. D., appointed by the Commissioner and approved by the Secretary of the Interior, general agent for education in Alaska, were shown by photographs of grounds, buildings, and pupils, and by a variety of specimens of pupils' work. This is a unique feature of the working influence of the Bureau. From the acquisition of that distant territory the United States were pledged by solemn treaty to provide for the natives the privileges enjoyed by our citizens. In the annual report of the Bureau for 1870 attention was called to the fact that nothing substantial had been done to discharge these obligations. Year after year attention was called in the annual report to this great neglect.

Even the enterprise of American missionaries did not enter the Territory. Dr. Sheldon Jackson, a most heroic minister of the Presbyterian Church, had advertised in vain for some one to enter the field until he secured Mrs. McFarland, who had been in the Indian service, and he led the way and located her as teacher at Fort Wrangel. Congress was long heedless of all appeals for legislation until Hon. Benjamin Harrison entered the Senate, and as a member of the Committee on Territories took up the subject, and secured the passage of a bill giv-

ing a limited form of Territorial government to that neglected country. Under this legislation schools were authorized, and their organization and management have been directed by this Bureau. Fortunately no wars have occurred with the natives, nor has the policy of feeding on the reservations been adopted, which, misapplied, has so delayed the development of American aborigines elsewhere. Schools as initiative of Government action are likely not only to save the native population from destruction, but to make them an element of intelligence and strength and the means of producing wealth.

The whole educational exhibit has been made more attractive to visitors by the courteous explanations of Mr. Parks, the attendant in charge. No visitor, unless he carefully examine the publications of the Bureau, would suspect the influence the Hon. W. T. Harris, its Commissioner, has had upon all others either of educational congresses or educational collections in the Columbian Exposition. In his office and at his hand were the addresses of all the educational systems, State and city institutions, of every grade in the United States; nay, more, all the chief educational agencies, ministries, and institutions in the world over. Little has been said of how active and earnest his efforts have been to secure proper attention to the exhibition of education, to assure it proper space, to secure for it the proper consideration of educators in this and other countries by letters and circulars, and by the approval of such measures as the celebration of Columbus Day, promoted so efficiently by the Youth's Companion newspaper.

#### SOME SPECIAL EXHIBITS.

##### THE BUSINESS EDUCATION EXHIBIT.

In this exhibit a good number of the best business colleges in the country united and sought to make an ideal presentation of their work. Speaking of it Professor Soule said: "The combined exhibit is instituted upon a grander scale than was ever undertaken before by business colleges, and it is made in such a liberal and catholic spirit by those engaged therein as will bring honor to their names and as will redound to the good of practical education, and to all business schools indiscriminately." The object of the exhibit has been declared to be to show the results of what is known as business education; first, to exhibit the original work as shown in the still form, and next to exhibit the living product in the educated student himself, as shown in the active form. The original work consists mainly of books of accounts, where are shown the records of business transactions written by the student, together with the papers and correspondence pertaining to the same, as also the phonographic outlines of matter taken from dictation with typewritten transcription set off. In addition to this, some of the schools have very properly presented written lessons in English and carefully arranged mathematical solutions. In the active exhibit the real boys and girls are at work there in their attainments, the product

of the schools. Some of them are keeping books—real books—containing the records of real transactions; others are making out bills of purchase and writing letters—real bills and real letters—pertaining to real business that is occurring daily with the same regularity and fullness of detail that distinguishes business everywhere. Dr. Selim Peabody, chief of department of liberal arts, has said the exhibit being collective has no competitor, and I may be permitted to say that it is unique, comprehensive, complete, and, for every reason, admirable. It illustrates the excellent results which may be secured in a collective exhibit, using time, money, and skill to the best advantage.

#### INSTRUCTION IN HOME BUILDING.

A happy thought came to the social economical science committee of the Women's Auxiliary of Philadelphia when the association decided to erect on the exhibition grounds at Chicago a workingman's house as a model for the study of visitors.

Every American is interested that his country should be a land of homes. The late census made an investigation never before made into farm and home proprietorship in the several States and Territories. The condition of the family is the measure of civilization. If society is to advance, the solitary must be set apart in families. The heart delights to think that there is no place like home. The home fills a large place in all progressive civilization. How often it is the theme of poetry. Says Thompson:

Home is the resort  
Of love, of joy, of peace, and plenty; where  
Supporting and supported, polished friends  
And dear relations mingle into bliss.

The ladies of Philadelphia, in carrying out their plan, attempted nothing fanciful. Philadelphia, noted as a city of homes, furnished them the model.

The house was built in brick, and was an exact counterpart of many occupied by the workmen of their city. There was no attempt at palatial conditions, and while utility and health were consulted at every turn, there was careful regard for taste. The ground and elevation plans were prepared and could be obtained by those who sought them.

How vast this interest is may be judged by the investigations of the last census.

Of the 12,690,152 families in the whole country 47.80 per cent own their farms and homes and 52.20 per cent hire; and of the families owning their farms and homes 27.97 per cent have incumbrance thereon and 72.03 per cent no incumbrance. Among 100 families, on the average, 52 hire their farms and homes, 35 own free of incumbrance, and 13 own subject to incumbrance. The number of resident owners of land in the United States is 6,066,417 plus such a number of landowners as may be living in tenant families.



The farm families number 4,767,179, of which 65.92 per cent own their farms and 34.08 per cent hire, while of the owning families 28.22 per cent have incumbrance on their farms and 71.78 per cent have none. In 1880 25.56 per cent of the farms were hired. Among 100 farm families, on the average, 34 hire their farms, 47 own free of incumbrance, and 19 own subject to incumbrance.

The results for the 7,922,973 home families are that 36.90 per cent own their homes and 63.10 per cent hire them, while of the owning families 27.70 per cent own their homes subject to incumbrance and 72.30 per cent free. One hundred home families on the average contain 63 that hire their homes, 27 that own free of incumbrance, and 10 that own subject to incumbrance.

The cities and towns of 8,000 to 100,000 population are aggregated for the 1,749,579 home families that live in them, and of these families 35.96 per cent own their homes and 64.04 per cent hire, while of the owning families 34.11 per cent own subject to incumbrance and 65.89 per cent without incumbrance. In 100 home families, on the average, 64 hire their homes, 24 own free of incumbrance, and 12 own subject to incumbrance.

In the cities that contain over 100,000 population there are 1,948,834 home families, of which 22.83 per cent own their homes and 77.17 per cent hire, while of the owning families 37.80 per cent own subject to incumbrance, and 62.20 per cent free of incumbrance. In 100 home families in these cities, on the average, 77 hire their homes, 14 own free of incumbrance, and 9 own under incumbrance.

#### EXHIBIT OF THE BARON DE HIRSCH TRADE SCHOOLS.

These schools bear the name of the well-known philanthropist. The object of the schools is to teach Jewish boys and men who have arrived from Russia and Roumania such trades as are likely to afford them a living—not to make them finished mechanics, for that would require too much time, but to impart to them sufficient knowledge to make them “handy men” in shops, where they can continue their education, and eventually become master workmen in their employments. The fund supplies them with money, when necessary, to enter trades unions, so as not to in any manner conflict with organized labor.

The exhibit contained specimens in carpentry, ironwork, house and sign painting, turning, carving, artistic metal work, electroplating, plumbing, and gas fitting.

Those who attend the day classes and have no means of support are boarded by the fund and are required to attend the evening English classes. The course of studies occupy from four to six months, according to ability and the nature of the work done by the pupils, and they are placed in shops, to become self-supporting. Large numbers have already found a ready welcome in some of the best shops in New York and elsewhere. Transportation, when needed, is given to them by the

fund, and they thus become mechanics, with an honorable living nearly always assured them.

Inquiries can be addressed to general agent of the fund A. S. Solomons, 45 Broadway, New York City.

#### EDUCATION OF THE DEFECTIVE CLASSES, FEEBLE-MINDED, DEAF, AND BLIND.

Several countries exhibited some of the work done in education for the defective classes, but no foreign country showed the evidences of progress furnished from the United States. Elsewhere, in the main, the education of these classes has been treated as a charity and left to the uncertainties of private efforts. In America, the institutions for their benefit were early, unfortunately, called asylums, but wisely their administration was made one of public concern and of public expense—became a part of public provision for education, from which none are to be excluded and in which all are to share according to their ability. These exhibits were both collective and by institutions. In the collective exhibit for the deaf 25 institutions participated and in that for the blind 9 were represented, offering admirable opportunities for critical study. Here were plans of grounds, exterior and interior views of buildings, descriptions of administration, specimens of appliances, especially of the most improved, together with the work of students in great variety, both in letters and in manual training. It was a delight to see how education has been made to introduce these unfortunate classes into so large a share of the life of those given normal powers of mind, or speech, hearing, or sight. "What hath God wrought!" Their lives need no longer be so apart from others, so restricted in occupation, enjoyment, and growth, or so great a burden to others. If dependent on themselves, they have the means of self-support and comfort. They may share in the current intellectual, moral, and spiritual life of others. The Braille inventions, originated in the Illinois institutions for the blind, have added greatly to their facilities in the use of letters both for purposes of printing and writing.

The library for the blind, printed at Louisville, Ky., at the expense of a fund provided by a grant from the United States Treasury, and distributed pro rata to each Congressional district in the nation, is a provision for their intelligence as beneficent as it is beautiful. The Dr. Moon (of England) system for the home learning and reading of the blind is also doing great service. Many are familiar with the work so efficient in all the departments, but especially accomplishing so great results in music in the Royal Normal College for the Blind, Westow street, Upper Norwood, S. E., London, England, founded and conducted by Prof. F. J. Campbell, Ph. D., a native of Tennessee, United States, himself blind. The work for the deaf and dumb was fitly crowned by the exhibit of Gallaudet College, located at Kendall Green, Washington, D. C., a national college of excellent standards, and the only institution of this grade of instruction for the deaf in the world,



founded and conducted at national expense under E. M. Gallaudet, LL. D., president. The exhibit also reminded the observer of the introduction of deaf-mute instruction into our country by the elder Gallaudet.

The exhibit of 75 volumes of the volta bureau, sustained by the munificence of Alexander Graham Bell, inventor of the telephone, and under the direction of Hon. John Hitts, illustrated the good work it is doing. The improvements in teaching visible speech were specially illustrated in the school under Miss M. C. Gowen. (Which see.)

THE EXHIBIT OF THE ALLIANCE ISRAËLITE UNIVERSELLE.

This exhibit was in care of Joseph Biefeld, of Chicago, and was sent from the central office in Paris in care of the New York branch, of which A. S. Solomons, 45 Broadway, New York, is president. The exhibit showed something of the work of pupils and the plans and literature of the society.

In 1860 this philanthropic organization was formed at Paris, and to-day it numbers 40,000 members, of every nation, united in a central committee that meets at Paris. In addition, it has two cooperative societies that work upon the same plan and may be practically called a part of the main organization—the Anglo-Jewish Association of England, and the Israelitische Allianz of Vienna.

It is emphatically a benevolent society in the broader sense, having no political or religious bearing in any direct way. It aims to promote the emancipation and moral progress of the Jewish people in countries where they are still denied civil and religious liberty, and extends aid to those who suffer socially and politically by reason of their being Jews. As stated in its original address, the alliance is to defend the honor of Judaism whenever attacked, to encourage labor and useful trades and professions, to fight against ignorance and vice due to baseless prejudice, to promote by peaceful means the emancipation of brethren still oppressed by exceptional legislation, and to perfect general freedom by intellectual and moral regeneration.

Its work for the past thirty-two years has been steadily in the line thus prefigured. It has avoided religious discussion and political interference. It has endeavored to raise the standing of oppressed Israel wherever located, by making them, in sympathy with the nations with whom they were dwelling, as patriotic as their neighbors, so that the mistakes of sectarianism could not be charged against the schools that the alliance was developing. In Turkey, the pupils are taught the language, history, and geography of Turkey; in Bulgaria and Roumania, the pupils are taught the history and geography of those countries, and in Morocco the pupils of the schools at Tangiers, Tetuan, and Fez rival the Moorish children in their eagerness to be informed about the history and development of this ancient domain. While insisting on the familiarity of its pupils with the history and genius of Judaism, it admonishes them unfailingly to be patriotic; to be French in France,



German in Germany, English in English colonies. Its aim is to level the barriers that separate the Jews from other peoples, to make Judaism a living creed, not a political division.

Education is thus the sole work of the alliance—teaching the children of the poor and the ignorant in the language and traditions of the country of their birth, that they shall not be strangers within their own land, and teaching tolerance to the representatives of authority in regions where benighted prejudice and restrictive laws still subject the Jews to harsh treatment and grievous wrong.

As soon as the central committee learns of any act of oppression due to the revival of antiquated laws or the enactment of new legislation opposed to the spirit of the age, its secretary appeals to the better sense of the government through the local press, and tries to reach the ears of the leaders of thought and action by timely presentation of liberal ideas and argument. The press has been its noblest champion.

The alliance is recognized for its peaceful humanitarian mission in all liberal governments.

The alliance schools are established along the Mediterranean, spread in Turkey and Bulgaria, are to be found in Asia, and are flourishing in Morocco. Instead of the narrow and ill-ventilated Talmud Torah, these schools are commodious, airy, and under modern methods, with teachers trained to give varied instruction. Everywhere the establishment of these schools has inspired in neighboring classes and sects respect for the Jews, and they are used as models for others to follow in reorganizing their systems of instruction.

In addition to the general education of the children, they acquire practical knowledge in trades and agriculture; the girls are taught housework and needlework. Each school has a library of over 300 volumes. In the Jerusalem school there are six workshops, for upholstery, tailoring, shoemaking, turning, etc.

In the Jaffa Agricultural School, formed in 1870, the Porte leased 240 hectares of fine land at a nominal rent, the lease to extend indefinitely. So much has this school grown, that a recent report gives a glowing description of the state of the buildings, the large products of the farms, and the prospects of the pupils. They raise oxen, sheep, horses, mules, pigeons, etc. The annual output of oranges is large. Among the pupils are 20 gardeners, 10 winegrowers, and carpenters, tanners, and blacksmiths. There are 100 pupils in all, 50 being Russian exiles, the rest natives of Turkey and Roumania. On leaving the school graduates receive a subvention of nearly 1,000 francs. These graduates find ready work as directors of other schools and farms in the East and in the Argentine. The expenses of the school for this year reach 98,000 francs. The assured income will not reach 75,000 francs.

There are reported enrolled in all the schools—boys, 8,888; girls, 4,445.

## SCHOOL SAVINGS BANKS.

The rapidity with which extreme poverty swells up its victims is one of the startling facts in social science. The public school, acting upon every child, must be the great public agency for the arrest of this evil. If every child can be trained to save, as well as given the knowledge and habits which assure his earning, much will be done toward saving the very poor from the temptations and sufferings of poverty. School savings banks have already yielded excellent results in this direction. They have been most extensively adopted in Belgium and France. In Belgium, in 1889, there were reported 5,259 of these banks, with 212,037 depositors, to whom were due \$78,213.42. In France there were reported in 1887 23,371 savings banks, with 161,387 depositors, to whom were due \$2,421,229.62. They were introduced into this country by J. H. Thiry, esq., when commissioner of the schools of Long Island City, N. Y. His efforts from that date have received the approval of the United States Bureau of Education and of many of the most eminent American educators. It appeared from the data furnished in the exhibition that they had been adopted in 78 different districts or cities, in which there were reported 33,810 depositors, who had deposited \$345,643.52. Mr. Thiry acts on the principle that method is the arithmetic of success. Mr. A. E. Winship, editor of the *Journal of Education*, remarks: "M. de Molance has been the greatest promoter of school savings banks in France. It is found advisable in the elementary schools there to have the deposit received at least twice a week, and even a daily opportunity is better."

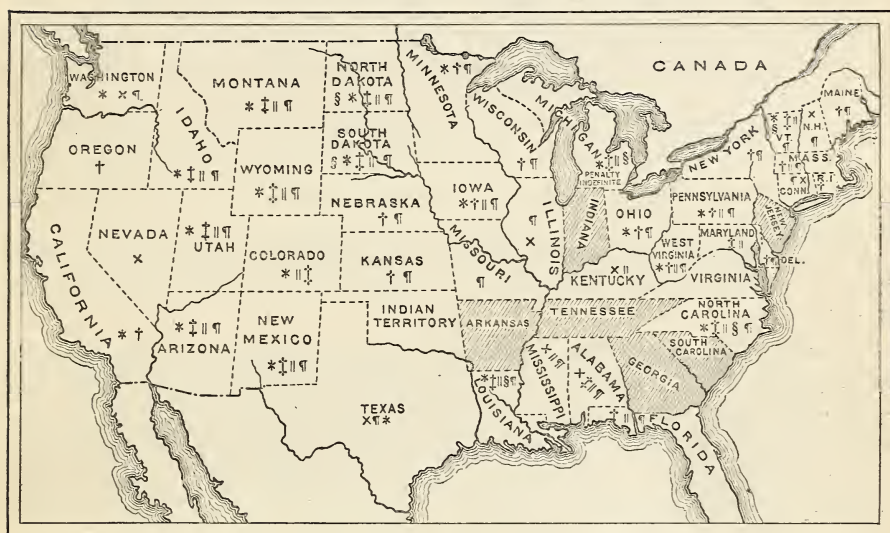
It is now thought that the best time to receive deposits is for fifteen minutes before the afternoon session daily. In this way not much time is required, and some of the fifteen minutes can be used for other things. There should be regularity and promptness in the meeting of appointments for the receipt of funds. The school savings bank prevents waste of pennies, prevents the formation of habits of buying candies, gum, etc. The influence of the economy is seen in all things, even in the care of clothing and school property. There should be no emphasis placed upon large deposits; there should be no reports of the largest deposits. The aim is to have the principle emphasized.

The school deposits should go to the regular savings bank at least once a week. If this is done on Friday the books will be ready for distribution to pupils on Monday. It is a valuable "business training" for the teacher and is worth all it costs. In France the school savings is in every grade, from the lowest primary to the highest.

The school savings bank tends to prevent pauperism, crime, sickness, prodigality, and various vices, and to make children thrifty, orderly, frugal, economical, discriminating in each use of money. It has its influence upon all phases of economy in time and virtue as well as money.

## TEMPERANCE EDUCATION AT THE WORLD'S COLUMBIAN EXPOSITION.

[States in white have a temperance education law ; those in black have none.]



## EXPLANATION OF MARKS.

× The cross signifies that scientific temperance is a mandatory study in public schools.

\* The star signifies a penalty attached to the enforcing clause of this statute in the State or Territory to which it is affixed.

† The dagger signifies that the study is not only mandatory, but is required of all pupils in all schools.

‡ The double dagger signifies that the study is required of all pupils in all schools and is to be pursued with text-books in the hands of pupils able to read.

¶ The parallel indicates that the study is to be taught in the same manner and as thoroughly as other required branches.

§ The section mark indicates that text-books on this topic must give at least one-fourth their space to temperance matter, and those used in the highest grade of graded schools at least 20 pages.

¶ The paragraph indicates that no teacher who has not passed a satisfactory examination in this subject is granted a certificate or authorized to teach.

Temperance education laws have since been passed in South Carolina, Indiana, and Tennessee.



THE PROGRESS AND EXTENT OF TEMPERANCE EDUCATION.<sup>1</sup>

During the twelve years prior to the World's Columbian Exposition the school study of physiology and hygiene, with special reference to the nature and effects of alcoholic drinks and other narcotics, came into great prominence as a preventive measure for the vice of intemperance. By State enactment, as indicated by the above map, it has been made a mandatory branch for all pupils in the public schools of 38 of the 44 States of the United States, and by act of Congress, for all pupils in all schools under Federal control, including those in the Territories, national, military, and naval academies, and the Indian and colored schools. The distinctive feature common to all these laws is the emphasis, in connection with the study of physiology and hygiene, of the nature and effects of alcoholic drinks and narcotics upon the human system.

The provincial parliaments of the Canadian provinces, either by act of parliament or by order of the provincial boards of education, have made the same study obligatory in the public schools of the Dominion of Canada.

The Parliament of Sweden has also enacted laws which make scientific or physiological temperance a part of the public education of Sweden.

A large, well graded, and authentic school literature, with methods of study founded on modern pedagogical ideas, has been produced, and was, with copies of the laws requiring this study, on exhibit at the Columbian Exposition. Throughout all Christendom there is a spirit of interested inquiry concerning this "Educational method for the prevention of intemperance." Hence a report of the educational forces represented at the Exposition, forces which are destined to influence character and shape individual and national destiny, would be incomplete should it omit the temperance educational movement. Therefore an examination was ordered of all the pupil work in physiology on exhibit, in order that, in so far as that would indicate, an idea might be gained of the real progress of the study in the schools of the States under this legislation.

In estimating the following report of this examination it should be borne in mind that the States did not in every instance send to the Exposition samples of work in all branches pursued in their schools; and, as in only a few instances was there any special effort made to secure samples of school work in this branch, its absence does not necessarily imply neglect or indifference. In this report honorable mention is given only to papers that show not only a knowledge of structure and function, but also a knowledge of the consequences of the violation of hygienic law in the use of alcoholic drinks and narcotics.

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<sup>1</sup>For the following extract and careful survey of the progress and extent of temperance education as exhibited by Mrs. Mary H. Hunt, I am indebted to Mrs. Susan M. D. Fry, Ph. D., one of the most efficient of the board of judges of department L.

The pupil work of each State was examined with reference to its compliance with the law of that State. As these laws differ in some particulars, a brief digest of the law applying is placed before each report. The reports of the pupil work in the different States are given in the order in which the laws requiring such work were enacted.

## VERMONT.

The scientific temperance education law was enacted in 1882, with strengthening amendments in 1886, requiring physiological temperance to be taught orally to all pupils in the schools as thoroughly as other branches to pupils who are not able to read, with text-books in the hands of pupils who are able to read; text-books to give at least one-fourth of their space to temperance matter, and those for the highest grade of graded schools at least 20 pages. Examination of teachers required upon the nature of alcoholic drinks and narcotics and their effects upon the human system. Penalty attached for nonenforcement of the law.

*Pupil work.*—Pupil work was exhibited from several towns, including Cabot and Newfane; this showed positive teachings against alcoholic drinks, especially the lighter liquors, and against tobacco.

## MICHIGAN.

The law was enacted in 1883, with strengthening amendments added in 1886. It requires that instruction shall be given in physiology and hygiene, with special reference to the nature of alcohol and narcotics and their effects upon the human system, as thoroughly as other branches, with text-books that meet the established standard (see foregoing map) in the hands of pupils able to read. Examination of teachers required; penalty for nonenforcement of law.

*Pupil work.*—*State normal school.*—Physiology as required by law is taught in this State normal school and in the normal training schools.

No student work from this institution on exhibit.

*Public schools.*—The late superintendent of public instruction, Hon. F. S. Finch, in charge of the exhibit, reports the study universally taught as the law requires. Thirteen cities and villages sent pupil work. Those from the Quincy schools seemed to be most in harmony with the spirit and letter of the law.

## NEW HAMPSHIRE.

The law was enacted in 1883, making this a mandatory study "in all mixed schools and in all graded schools above the primary grade."

Teachers receiving certificates must pass an examination on the subject.

*Pupil work.*—*Normal school.*—This study is pursued in the State normal and training schools. The pupil work exhibited from the seventh and eighth grades of the normal training school was largely anatomical.

*Public schools.*—The public schools, including those of Nashua and Portsmouth, exhibited pupil work which was chiefly anatomical, with little or no hygiene or any adequate treatment of the nature and effects of alcoholic drinks and narcotics.

## NEW YORK.

The law was enacted in 1884, requiring instruction on this subject to be given to all pupils in all schools under State control, and the examination of teachers in the same.

*Pupil work.*—*Public schools.*—The educational exhibit of this State reports physiological work from 146 cities, towns, and institutions. That examined showed descriptions of structural physiology, rather than a presentation of the more important subject of hygiene, including the nature and effects of alcoholic drinks and narcotics.

The fact that there were no text-books ready for the use of pupils in all grades when the law in this State was enacted was a great hindrance to its prompt enforcement. That so many towns and cities sent in exhibits of pupil work is an evidence of an increasing sentiment in favor of the complete enforcement of the law in all schools as required.

Physiology is one of the required studies for the academic credentials issued by the State of New York. Examinations for these credentials include questions on the effects of alcohol and tobacco.

## RHODE ISLAND.

The law was enacted in 1884, requiring this study of all pupils in all schools. No penalty attached.

No exhibit of physiology pupil work of any kind at the World's Columbian Exposition.

## PENNSYLVANIA.

The law was enacted in 1885, requiring this study of all pupils in all public schools and institutions to be taught as thoroughly as other branches. Examination of teachers required; penalty of forfeiture of public money for nonenforcement of law.

*Pupil work.*—*Normal schools.*—Seven of the thirteen normal schools had exhibits to a limited extent. Only two had physiology exhibits, both on purely anatomical subjects.

*Public schools.*—There was a very general exhibit of pupil work on this subject from the public schools of the State. Among these was work from the schools of West Chester, Pittsburg, Bryn Mawr, and Philadelphia. That from the Newton girls' combined school of Philadelphia, for skill in anatomical drawings, full and clear description of structure and hygiene of the organs described, and for the clear description of the physical, mental, and moral effects following the use of alcoholic drinks, deserves honorable mention.

The exhibit of pupil work in the fourth grade of the Drexel School deserves special commendation for statement of facts concerning the



origin and nature of alcoholic drinks and their effects upon the organs described. The language of the papers is natural, showing them to be an expression of knowledge and logical understanding on the part of the pupils.

## MAINE.

The temperance education law of Maine was enacted in 1885. It requires this study of all pupils in all schools supported by public money, with the examination of teachers.

*Pupil work.*—*Normal schools.*—Physiology is taught in the three State normal schools. No exhibit of work from any except Farmington; that chiefly anatomical with a little hygiene, and less reference to the effects of alcohol and narcotics.

State college at Orono is under this law, but had no exhibit.

*Public schools.*—Fourteen towns and cities sent manuscript pupil work; five of these included the effects of alcohol and narcotics.

## MASSACHUSETTS.

The law was enacted in 1885. It requires that this study be taught to all pupils in all schools, as thoroughly as other branches, and that teachers pass an examination on the subject before receiving certificates. Penalty attached for nonenforcement of the law.

*Pupil work.*—*Normal schools.*—Five normal schools and the reform schools and defective class schools are all included under this law. No exhibit of physiology pupil work was made by them.

*Public schools.*—Of the manuscript physiology work from this State, including the effects of alcoholic drinks and narcotics, the work of the sixth grade of the Boston schools, as well as that from the grammar grade of the Salem Bentley school, and from the West Boylston high school, deserves commendation. The work from the Hyde Park schools deserves honorable mention. The course and methods of study there adopted, as illustrated by the pupil work, deserve especial mention. The facts taught are presented in a manner suited to each grade, and the subject receives enlarged treatment from grade to grade.

## ALABAMA.

The law was enacted in 1885, and was subsequently reinforced by strengthening amendments in 1891. It requires this study of all pupils in all schools, taught as thoroughly as other branches, with text-books in the hands of pupils able to read, and examination of teachers.

There was no exhibit of physiology pupil work.

## WISCONSIN.

The law was enacted in 1885, requiring this study of all pupils in all schools; also the examination of teachers.

*Pupil work.*—*Normal schools.*—No pupil work on physiology on exhibit from either of the five normal schools.

*Public schools.*—A few anatomical charts were exhibited by some high schools. No exhibit of pupil work on hygiene or the effects of alcohol and narcotics.

## MISSOURI.

In 1885 Missouri enacted a permissive temperance education law, but required the examination of teachers in physiological temperance.

*Pupil work.—Normal schools.*—There was no physiology pupil work exhibited by any of the six State normal schools, except the St. Louis normal school; the papers from this showed commendable lessons on the effects of alcoholic drinks.

*Public schools.*—The physiology exhibit of the Kansas City Central high school deserves honorable mention for its intelligent discussion of the origin of alcohol through fermentation, and the physical effects of this beverage. That of the fourth grade of the Humboldt and Jefferson schools, Kansas City, deserves commendation.

## KANSAS.

The law was enacted in 1885, requiring this study of all pupils in all schools, and also the examination of teachers.

*Pupil work.—Normal schools.*—The State University, the agricultural college, and the normal school are under this law, and physiological temperance is in their courses of study. The normal gives twenty weeks in the seventh year to this branch.

Normal institutes are held in each county four weeks of each year. Two or three days are given to the topic of hygiene, including the consequences of violating hygienic law by the use of alcohol, tobacco, and other narcotics.

*Public schools.*—Some manuscript pupil work in physiology was exhibited, all of which included the effects of alcohol and narcotics.

The superintendent of the exhibit reported that the study is thoroughly taught in all the Kansas schools so far as known, and that the study is effecting all that could be desired in giving pupils an intelligent trend toward abstinence from alcoholic drinks and tobacco and in favor of obedience to all laws of health.

## NEBRASKA.

The law was enacted in 1885, requiring this study of all pupils in all schools, and the examination of teachers.

*State University.*—Hygiene is taught in every course of study in this institution and is pursued from one to two and a half years. No pupil work in physiology exhibited.

*Normal school.*—Physiology, including hygiene and the effects of alcohol and narcotics, is in the course of study. No exhibit of physiology student work.

*Public schools.*—The county school officials of 49 counties reported "Physiological temperance regularly and systematically taught in the public schools." Twenty counties reported this study taught incidentally. Eight counties reported it not taught at all. Thirteen counties made no report.

Eight towns and cities sent exhibits of pupil work in this branch. Two others exhibited pupil work in physiology which was purely anatomical, with no reference to alcoholic drinks, tobacco, and hygiene.

The pupil work of the eighth grade in the Pawnee City public schools deserves honorable mention.

## OREGON.

This law was enacted in 1885, requiring that this study be pursued by all pupils in all schools.

*Pupil work.*—*Normal schools.*—The University of Oregon and two normal schools are under this law. Physiology and hygiene, including the effects of narcotics, are in their courses of study. No exhibit of student work in this branch was contributed.

*Public schools.*—It was reported that this branch is universally taught, beginning with the third or fourth grade. A limited exhibit of physiology pupil work showed some treatment of the effect of alcohol and narcotics.

## NEVADA.

The law was enacted in 1885, making this a mandatory study in all public schools.

*Public schools.*—No exhibit in physiological temperance.

## CONNECTICUT.

The law was enacted in 1886, but with an amendment requiring this study to be taught from a book prepared by a State board. Little or no pursuit of the subject in the schools followed. In 1893 the law was amended requiring this study of all pupils in all schools, and that it be taught as thoroughly as other branches, with text-books in the hands of the pupils. These text-books must devote at least one-fifth of their space to temperance teaching for the primary and intermediate grades, and at least 20 pages for the highest grade of graded schools. Examination of teachers required, with penalty for non-enforcement of the law.

As this law was not approved until May 26, 1893, there could be no exhibit of pupil work as a result of the amended law.

*Pupil work.*—*Normal schools.*—There are three normal schools and one agricultural college that come under this law. No physiology student work exhibited by these schools.

*Public schools.*—Good work in physiology, but including no reference to hygiene or to the effects of alcohol and tobacco upon the human sys-



tem was exhibited by several schools. The Pawcatuck high school sent commendable papers showing a good knowledge of the origin, nature, and effects of alcoholic drinks and narcotics.

#### NATIONAL TEMPERANCE EDUCATION LAW.

In 1886 the National Congress enacted a law applying to all the pupils in all the public schools of the Territories and of the District of Columbia, in the Military and Naval Academies, and in Indian and colored schools. This law requires that physiological temperance be studied by all pupils in schools, and that it be taught as thoroughly as other branches, with the use of text-books in the hands of the pupils. The examination of teachers for a certificate is required, and a penalty for nonenforcement of the law is attached.

The lack of any extended pupil work following this law is not an indication of its nonenforcement in the field to which it applies.

#### NEW MEXICO.

The subject is taught to a limited extent, but evidently not from text-books up to the standard.

#### UTAH.

There was a limited exhibit of physiology pupil work from the public schools, but it included no adequate treatment of hygiene or the effects of alcohol and narcotics.

#### INDIAN TERRITORY.

No exhibit of physiology pupil work.

#### ARIZONA.

No exhibit of physiology pupil work.

#### MARYLAND.

The law was enacted in 1886, and requires that the study be pursued by all pupils in all schools with text-books in the hands of pupils able to read. Instruction must be as thorough as in other branches.

*Pupil work.—Public schools.*—The pupil work exhibited by the Baltimore city grammar schools showed very good instruction, especially in the seventh and eighth grades, and that of the seventh grade deserves honorable mention. The manuscript sent by the female grammar school, No. 7, was especially complete and satisfactory. Good work was also presented by the colored training school of Baltimore.

#### IOWA.

The law was enacted in 1886, requiring this study of all pupils in all schools, and that the subject be taught as thoroughly as other branches; also the examination of teachers. Penalty for nonenforcement attached to the law.

*Pupil work.*—*State University.*—This institution has physiology in its course of study, but made no exhibit of student work.

*Normal schools.*—Temperance physiology is in their course of study, but they had no exhibit of pupil work in physiology. It was reported that temperance physiology is taught.

*Public schools.*—Manuscript and chart work on scientific temperance was exhibited by 13 towns and cities. That from the Oscaloosa schools deserves commendation; and that from the fifth, sixth, seventh, and eighth grades of the West Des Moines schools deserves honorable mention.

## DELAWARE.

The law was enacted in 1887, requiring this study of all pupils in all schools, and also the examination of teachers. No physiology pupil work was exhibited.

## WEST VIRGINIA.

The law, enacted in 1887, requires that this subject be taught all pupils in all schools as thoroughly as other branches. Examination of teachers required. Penalty for nonenforcement attached to the law.

*Pupil work.*—*Normal schools.*—There are six normal schools, none of which exhibit any physiology pupil work.

*Public schools.*—The primary and grammar grades showed very good instruction in anatomy and hygiene; but the papers examined gave little attention to the effects of alcohol and narcotics.

The superintendent in charge of the exhibit reported that excellent work is done in the public schools throughout the State, but that the papers on exhibit were not gathered with reference to scientific temperance instruction.

## COLORADO.

The law, enacted in 1887, requires this study of all pupils in all schools to be taught as thoroughly as other branches, with text-books in the hands of pupils able to read; penalty for nonenforcement.

*Pupil work.*—*Normal school.*—This institution has physiology in its course of study, but no pupil work except charts and anatomical drawings was exhibited.

*Public schools.*—The State superintendent of public instruction, in charge of the exhibit, reported that the result of such faithful teachings of scientific temperance as he had observed was all that the most sanguine friends of the movement could desire in creating an intelligent aversion for alcoholic drinks and narcotics.

## MINNESOTA.

The law was enacted in 1887, and requires this study of all pupils in all schools, also the examination of teachers; penalty attached for non-enforcement of the law.

*Pupil work.—Normal schools.*—Physiology is taught in the four normal schools, but they sent no exhibit of student work in this branch.

*Public schools.*—The pupil work exhibited by the high schools shows a good knowledge of anatomy, but seems to indicate that the text-books used are old ones, not yet brought up to date, for only the "habitual" and "excessive" use of alcohol is condemned.

#### CALIFORNIA.

The law was enacted in 1887. It requires this study of all pupils in all schools. A penalty for nonenforcement is attached.

*Pupil work.—Normal schools.*—Each of the three normal schools has a regular course in physiology and hygiene, with microscopic work, and prize essays on the subject of narcotics. There was no pupil work on this subject in the normal exhibits.

*Public schools.*—Of the pupil work in physiology exhibited by the schools of this State, that from the Lincoln school of Oakland showed the most practical comprehension of the subject from the standpoint of hygiene and the consequences of a violation of hygienic law in the use of alcoholic drinks.

#### LOUISIANA.

The law was enacted in 1888, requiring the study of all pupils in all schools, with text-books in the hands of pupils able to read. These books must devote at least one-fourth of their space to temperance matter, and at least 20 pages for those used in the highest grade of graded schools. The subject must be taught as thoroughly as other branches; teachers examined; penalty for nonenforcement attached.

No exhibit of pupil work in temperance physiology.

#### OHIO.

The law, enacted in 1888, requires that this study be pursued by all pupils in all schools, and that teachers be examined in it before receiving certificates. Penalty attached for violation of the law.

*Pupil work.*—There was no exhibit of pupil work, except that from the Cleveland high school, which was entirely lacking in any mention of the effects of alcohol and narcotics, and that from the Mount Sterling school, which was only fair. The papers presented moral rather than scientific reasons for total abstinence.

#### FLORIDA.

The law was enacted in 1889. It requires this study of all pupils in all schools. Examination of teachers is required.

*Pupil work.—Normal schools.*—These schools presented no physiology student work.

*Public schools.*—A number of schools sent pupil work which showed that the subject was taught, and that in the lower grades the instruction was good.



## ILLINOIS.

The law was enacted in 1889, making this a mandatory study in public schools and requiring the examination of teachers.

*Pupil work.—Normal schools.*—The University of Illinois comes within the provisions of this law, and the exhibitors reported that physiology is extensively taught.

The State Normal University gives physiology a place in its curriculum. The exhibit showed good anatomical work, but there was no treatment of hygiene or the effects of alcohol and narcotics. The Southern Illinois State University also showed in its exhibit little attention paid to hygiene and the nature and effects of alcohol and narcotics.

*Public schools.*—There were exhibits of physiology pupil work from Chicago, Rock Island, Nashville, Springfield, La Salle, Kewanee, and from Pulaski and Clark counties. All of them contained more or less reference to the nature and effects of alcohol and narcotics. In the Chicago schools there is no instruction in this branch below the eighth grade.

## MONTANA.

Being a Territory in 1886, Montana came under the national temperance education law then enacted. The Pathfinder Physiologies were in 1889 adopted for six years, and are consequently now in use.

*Pupil work.—Public schools.*—Many towns and cities sent manuscript work in temperance physiology. That from the third grade of the Helena schools showed excellent training. The papers sent by the fifth grade of the Marysville schools indicated that the subject of hygiene and the effects of narcotics had been faithfully studied, and the work deserves commendation, while that from the ninth grade of the same school should receive honorable mention.

## NORTH DAKOTA.

The law, enacted in 1890, requires this study of all pupils in all schools, to be taught as thoroughly as other branches, with text-books in the hands of pupils able to read. These text-books must meet the required standard (see map); penalty attached for nonenforcement of the law. Examination of teachers is required.

*Pupil work.*—There was an exhibit of high school pupil work in physiology, which, however, consisted chiefly of technical anatomy.

## SOUTH DAKOTA.

The law was enacted in 1890, and requires the study of all pupils in all schools to be taught as thoroughly as other branches, with text-books in the hands of pupils able to read. These books must meet the established standard (see map), and teachers must pass an examination on the subject. Penalty attached for violation of the law.

*Pupil work.—Normal schools.*—It was reported that these schools have physiology in their course of study, and the pupil work exhibited by the Madison Normal School showed that the subjects of hygiene and narcotics received attention.

*Public schools.*—The county superintendent, in charge of the exhibit, reported very satisfactory results arising from the thorough teaching given in this study throughout the State. There are, according to his report, 26,732 pupils pursuing the subject with text-books. The manuscript pupil work showed a thorough knowledge of the nature and effects of alcohol and narcotics; and the exhibit of pupil work, as a whole, deserves honorable mention.

## WASHINGTON.

The law, enacted in 1890, makes physiological temperance a mandatory study, and attaches a penalty for nonenforcement.

*Pupil work.—Normal schools.*—There was no student work exhibited from either of the two recently established normal schools.

*Public schools.*—There was a very commendable exhibit of anatomical drawings done in pencil, ink, and crayon, which gave especial prominence to the results of violating hygienic laws in the use of alcoholic drinks and tobacco. Those from the Pullman schools, showing the effects of alcohol and tobacco upon the pulse, and the effect of alcohol upon the brain, merit special commendation. The manuscript work in the sixth grade of the Olympia schools deserves honorable mention for its presentation of the effects of alcoholic drinks and narcotics.

## NORTH CAROLINA.

The law was enacted in 1891, and requires that this study be taught all pupils in all schools as thoroughly as other branches, with text-books in the hands of pupils who are able to read. These books must meet the established standard (see map). Examination of teachers is required and a penalty for nonenforcement of the law is attached. No exhibit of physiology pupil work.

## MISSISSIPPI.

The law was enacted in 1892, making this a mandatory study, to be taught in the same manner and as thoroughly as other branches. Examination of teachers required. No exhibit of physiology pupil work.

## KENTUCKY.

The law was enacted in 1893, and requires this study of all pupils in all schools, with instruction as thorough as that in other branches.

As this law was not signed by the governor until after the Exposition was opened, there could be no exhibit of physiology pupil work coming under this law.

## TEXAS.

The law was enacted in 1893. It requires this study of all pupils in all schools, and also the examination of teachers. As this law was not

approved until after the opening of the Exposition, no work under the law could be presented.

## ARKANSAS.

This State has no temperance education law. Some physiology work was on exhibition, but contained no reference to the power and effects of alcohol and narcotics.

## INDIANA.

This State has no temperance education law. The course of study in the Indiana Institution for Deaf-Mutes contains physiology in the academic year.

## NEW JERSEY.

This State has no temperance education law.

*Pupil work.*—*Normal school.*—It was reported that the Trenton normal school has the subject of the "Effects of narcotics" taught by a specialist in the regular course.

*Public schools.*—The Jersey City high school exhibited superior anatomical work by the pupils. There were several very commendable charts illustrating the effect of alcohol upon the stomach and liver. In the Atlantic County schools, as shown by the pupil work, the subjects of hygiene and the effects of alcohol and narcotics are well taught in all grades. The primary grades showed especially good work. The effect of alcohol on the organs of the body was illustrated and described in superior pupil work from the Westwood school, and deserves honorable mention.

## CATHOLIC COLLEGES AND SCHOOLS OF THE UNITED STATES.

Many colleges and many of the higher grade schools exhibited work in technical physiology, in which there was a comparatively small amount of hygiene, and in only a few instances was reference made to the effects of alcohol and narcotics. A very commendable outline of the various phases of the subject, under the head of "Alcoholic drinks and narcotics," was exhibited in a paper by Thomas J. Murphy, of Manhattan College, New York City. Unfortunately this was not exemplified in the material exhibited. There seemed to be, in these schools, a need of more treatment of the nature of alcoholic drinks and of the power of a little alcohol to create an appetite.

## SUMMARY.

Three of the 38 States having temperance education laws made no educational exhibit whatever. Of the remaining 35 States, the laws of Kentucky, Texas, and the amended law of Connecticut did not go into effect until after the opening of the Exposition, hence they could make no exhibit of work as a result of the law. Connecticut, however, furnished some commendable papers showing a good, comprehensive knowledge of the subject.



Seven of the remaining 32 States did not include physiology and hygiene in their exhibit, viz: Rhode Island, Alabama, Nevada, Delaware, Louisiana, North Carolina, and Mississippi; and 2 of the 4 Territories, Arizona and Indian, made no exhibit of physiology pupil work. This, however, does not indicate that the subject is not taught, as schools made their own choice of what they would send.

There were, then, 25 States under special temperance laws, not including Connecticut, that showed temperance physiology in their exhibits at the World's Columbian Exposition. Of these, it appears from the foregoing report, more than one-third presented work of such excellence, showing an intelligent knowledge of physiology and hygiene, and of the effects of alcohol and narcotics upon the human system as to merit special commendation or honorable mention, viz: Pennsylvania, Massachusetts, Missouri, Nebraska, Maryland, Iowa, Montana, South Dakota, and Washington.

Of the States not having a temperance education law, New Jersey showed such superior pupil work on the subject of hygiene and the effects of alcohol and narcotics as to merit honorable mention.

A number of institutions and some States having no temperance physiology, or but little, on exhibition were reported by the superintendent of public instruction or other officials to have the study well taught and according to the conditions of the law—notably, Michigan, Kansas, Oregon, West Virginia, and Colorado.

In view of the fact that the subject-matter to be taught in this branch was new not only to pupils, but to teachers, and that the school literature had to be written and methods of study to be devised after the first laws were enacted, the entire exhibit of pupil work in temperance physiology at the World's Columbian Exposition was most encouraging.

The testimony of those in charge of exhibits from the various States who are in sympathy with this branch, and therefore have been watching its progress in different vicinities, is that the study is not only making an impression upon the minds of the pupils in favor of total abstinence from alcoholic liquors and narcotics and in favor of hygienic living, but that it is strongly influencing the habits of the children and through them reaching the homes so widely that it is sure to shape the future of the nation.

## II.—EXHIBITS FROM FOREIGN COUNTRIES.

### ENGLAND, SCOTLAND, IRELAND, AND WALES.

There was no adequate exhibition of public education under group 149 from England, Scotland, Ireland, or Wales. This deficiency was in no small measure made up by a statement from J. G. Fitch, Her Majesty's chief inspector of schools, and furnished to visitors at Chicago. There could be no better authority. He said, England differs from most European countries and from America in having been very

late to accept on the part of the State any responsibility for providing the means of public education. It can not be said even yet to possess a coherent and symmetrical system, such, for example, as that which the forethought of Swiss and German statesmen, of John Knox in Scotland, or of the founders of the New England States created for maintaining a sufficient supply of schools. Its present educational position has been attained by slow degrees and by means of numerous experiments and compromises. Until the middle of the present century the only institutions which had existed for public education were endowed or foundation schools, and schools established voluntarily by societies or private benefactors. The earlier endowed schools date from the fifteenth and sixteenth centuries, and a small number from the fourteenth century, and had for their main purposes the teaching of Latin and Greek—then the chief, if not the only, accessible instruments of intellectual culture—and the preparation of scholars for the ancient universities. Another large group of endowed schools, dating chiefly from the beginning of the eighteenth century, had for their chief object the education of the poor in the elements of knowledge and in the “principles of the Established Church.” Under the name of parochial, or charity schools, endowed foundations of this type continued until recent times to furnish gratuitous instruction of a humble kind, and often to provide clothing and apprenticeship. In the beginning of the present century Dr. Andrew Bell and Joseph Lancaster aroused by their personal efforts considerable enthusiasm on behalf of popular education, and became the founders of two great societies, the National Society for the Education of the Poor in connection with the Established Church, and the British and Foreign School Society, which was composed of persons of various Christian denominations, but which sought to make the school instruction scriptural but nonsectarian. Both societies achieved large success in inducing local committees in all parts of the country to establish and maintain elementary schools. In 1839, when, at the instance of Lord Lansdowne, Lord Brougham, and Lord John Russell the first grants were made by Parliament in aid of public education, it was through the agency of these two societies that those grants were made. A committee of privy council was then formed to administer such funds as might from time to time be intrusted to it by Parliament, and in 1846 appeared the first minutes of council, framed largely by Sir James Shuttleworth, the secretary of the department. These minutes established a system of public inspection, provided for the training and certification of teachers, and defined the conditions under which public aid should be dispensed to the schools.

Until the year 1870, however, the State made no provision for the establishment of new schools, but simply confined its action to the administration of grants in aid of such schools as were founded or managed by the two societies and other voluntary or religious bodies. In that year the elementary education act recognized for the first time the

duty of the State to provide for all her children the means of instruction. It proceeded on the assumption that the voluntary system existed, and ought to be maintained and encouraged, but that it needed to be supplemented by other provisions wherever it proved to be deficient. It enacted, therefore, that in those places school boards should be elected by the ratepayers, and should be charged with the duty of erecting and maintaining such schools as were needed to make the supply of instruction—computed as accommodation for 1 in 6 of the whole population—complete. The act of 1870 further enjoined that in all aided schools, denominational and undenominational alike, parents who objected to any form of religious teaching or worship might withdraw their children from such teaching without losing any of the other benefits of the school. It was also enacted that in all schools provided by local boards, and aided by rates, no catechism or religious formula distinctive of any particular denomination should be used. The education department was empowered to administer public aid impartially to all public day schools which fulfilled the required conditions as to the qualifications and number of the staff, the suitability of the buildings, and the quality of the secular instruction, but was not charged with the minor duty of inquiring into or regulating the religious instruction, which was in all cases to be given in such part of the day as to leave for every meeting of the school two hours of unbroken secular teaching. Other provisions of the education act empowered school boards to frame local by-laws compelling the attendance of children at school, and subsequent acts have created school attendance committees to exercise this power wherever boards do not exist. There is now in every part of the country a local authority which, by means of its officers, enforces the attendance of children between the ages of 5 and 14, except those partially or wholly exempted for labor, by passing the standard examination appropriate to their age.

These measures have proved very effective for their purpose. In 1870, the year of the passage of the education act, there were in England and Wales 9,563 voluntary schools receiving Government aid and inspection, with a total of 1,152,389 scholars, and 12,467 certified teachers. The Parliamentary grant amounted to £464,943. The report of the education department for the year 1891-92 shows that there are now 4,846,891 scholars on the registers, and 3,749,956 in average attendance in day schools and 51,974 in evening schools; the total number of certified teachers has risen to 47,823, that of assistants to 23,508, of pupil teachers to 28,131, and of students in training colleges to 3,310.

Of the large additional school accommodation thus provided during the last twenty years, the school boards, in the exercise of their statutory powers, have furnished places for about 2,000,000 scholars, and the zeal of the friends of voluntary schools about 1,750,000. There is now ample accommodation in public elementary schools for 5,500,000 children, or for considerably more than one-sixth of the entire population.



The funds by which these schools are maintained in efficiency were, until recently, derived from three sources: (1) The Parliamentary grant, amounting to £3,434,759; (2) local contributions, either in the form of rates to board schools or subscriptions to voluntary schools, and (3) the fees paid by parents, amounting to about £2,000,000. But in 1891 the assisted education act transferred this last charge, or nearly the whole of it, from the parents to the imperial revenue, and gave to all children the right to gratuitous education. It may now be roughly estimated that of the total annual cost of elementary education in England and Wales (£7,813,706) nearly £5,500,000 will be paid out of the public funds by the central department, £1,500,000 by the local rates, and nearly £800,000, or about one-tenth of the whole, by voluntary contributions. The figures for Scotland, which has a separate education department of its own, show similar general result. There are in the primary schools of that country 680,580 children, or more than 1 in 6 of the entire population, of whom an average of 540,028 are in daily attendance.

The administration of the English education department is intrusted mainly to the vice-president of the privy council. Of those who have held this office since its establishment in 1856 the most conspicuous and influential have been Mr. Robert Lowe, afterwards Lord Sherbrooke, who introduced the system of assessing the amount of the grant by the efficiency of the school as tested by examination; Mr. W. E. Forster, the author of the education act of 1870; Mr. A. J. Mundella, who in 1881 greatly improved the educational provisions of the code, and, in particular, did much to encourage the adoption of the methods of Froebel and Pestalozzi in the infant schools; and Sir Hart-Dyke, under whose administration was passed the assisted education act.

It is also to the last mentioned of these statesmen that is to be credited an important new experiment in respect of the training of teachers. The Government has long assisted by large annual grants the normal colleges—44 in number—in which school masters and mistresses are trained for their special work. But these institutions do not supply the whole annual demand for trained teachers, and accordingly the universities of the United Kingdom and the numerous provincial colleges of university rank, which have of late been founded in the principal towns, have been invited to cooperate with the department by attaching to them normal classes for the special professional training of such students as desire to become elementary teachers. In this way the supply of persons who have received a liberal education, and who have also been specially trained in the art of teaching, will be greatly increased.

It will thus be seen that the whole of the provision for elementary education is now aided and controlled by the State. But hitherto no public aid or supervision has been extended in England to secondary education. The provision of secondary and intermediate schools con-

sists mainly (1) of endowed foundations, usually called grammar schools; (2) of proprietary schools established by societies, companies, or other local bodies, and (3) of private schools. Of these, the schools of the first class only can be regarded as in any sense within the purview of the Government; for the charity commission, which is a permanent department of the State, is intrusted with the power of framing schemes for the government of all endowed schools and of determining their educational character.

Many recent facts in our history, however, indicate that the sphere of public influence over secondary instruction is widening, and is likely to be further enlarged. In Wales an intermediate education act (1889) is already operating beneficially in coordinating the work of the secondary schools. In Scotland the influence of the education department has extended to institutions considerably above the rank of elementary schools. The local taxation act of 1890 for England and Wales set free a large annual sum derived from liquor licenses and placed it at the disposal of county councils for the promotion of technical and secondary instruction. At present a large portion of this sum is being expended in encouraging such forms of science teaching and of handicraft as have a more direct bearing on the local industries; but much of it will doubtless become available for other forms of advanced education. Treasury grants have recently been made to provincial colleges in the largest industrial centers. A select committee of the House of Commons has recommended the enactment of a measure for the registration and better qualification of secondary teachers, and a bill empowering municipal bodies to establish, with the aid of local rates, secondary schools wherever they may be needed was framed and introduced into the late Parliament by Mr. Arthur Acland, the new vice-president of the council.

Among the questions still under consideration, and on which Parliament and the public will probably ere long express a decisive opinion, are: (1) The enlargement of the powers of the education department under a responsible minister of public instruction, so as to bring into harmony the various agencies for primary, secondary, and university instruction, at the same time leaving large scope for local effort and initiative, for varied types of schools, and for the liberty of teaching; (2) the provision of such links between all institutions for public instruction as may enable scholars of promise to proceed from the elementary to the secondary school and thence to the university; (3) better provision for the professional training of secondary teachers, analogous to that which has proved so valuable in the department of elementary instruction; (4) such publicity respecting the aims and successes of secondary and higher schools as may enable parents to know their condition and to choose what will suit them best; (5) the right place of manual and industrial training and of practical and experimental science in the scheme of general education, and the rela-

tion in which such training ought to stand to the traditional discipline in languages and to intellectual culture generally; (6) the best means of enlisting the cooperation of local and academic bodies with the Government in the maintenance of a high ideal standard of education, and in its improvement from year to year.

The science and art department, South Kensington, London, SW., exhibited examples of drawing, painting, modeling and design executed by art students in the National Art Schools, South Kensington, London, and in other schools of art in the United Kingdom, showing the principal stages of art instruction under the department of science and art.

D. J. Cunningham, M. D., Trinity College, University of Dublin, exhibited a selection from a series of models prepared with a view of showing the topographical relations of the brain in man and the apes; models of the cerebral hemispheres of an adult woman, a new born child, a chimpanzee, and an orang-outang, removed from the cranial cavity; models illustrative of the anatomy of the fully flexed elbow joint.

The examination schools, Oxford, exhibited books, papers, photographs, and drawings illustrative of the history and methods of the university extension system.

The school board for London exhibited specimens of work done by pupils in the schools in writing, map drawing, designing in colors and in colored papers, modeling in cardboard and in clay, woodwork, iron-work, brasswork, needlework, kindergarten hand work, laundry work; specimens of school materials and appliances, including books, pictures, diagrams, scientific and other apparatus, school museum; models, plans, and elevations (exhibited by T. J. Bailey, architect) of schools and class rooms; regulations, reports.

There was perhaps enough in these exhibits to turn the thoughtful visitor to the examination of the results already attained by public education in England, and interest him in the history of the heroic struggle by which these results have been secured.

#### WOMAN'S EDUCATION.

Woman's education in these countries, especially her training in art and industry, was more fully brought out by the efforts of the lady managers. It was recalled that it was a picture by Lady Butler, painted when she was Miss Elizabeth Thompson, which led Mr. Ruskin to retract the dictum he had laid down, that no woman could ever compose and paint a picture.

Nor was it forgotten that we read in Boswell's life of Johnson:

Johnson was in such good spirits that everything seemed to please him as we drove along. Our conversation turned on a variety of subjects. He thought portrait painting an improper employment for a woman: "Public practice of any art," he observed, "and staring in men's faces is very indelicate in a female."



It was desired, too, that visitors should keep in mind that Sidney Smith, writing in 1810, remarked:

That at that time, owing to the very low standard of education among women and the absence of any kind of encouragement to them to undertake intellectual exertion, there was hardly a single work, either of reason or imagination, written by a woman in English literature, and that scarcely one woman even had crept into the ranks of the minor poets.

The object of the woman's committee, as stated by Mrs. Fawcet, was to collect such a series of exhibits as would form within certain limits a fair representation of English women's work in various fields of activity. The selection admitted no work in which men shared. Woman's work was divided roughly into two heads: (1) Occupations that have been in the hands of women from time immemorial; (2) occupations in which women have taken an active part only within comparatively modern times.

The distinction is perhaps more apparent than real, because the same spirit that has caused women to enter upon new fields of activity has also caused them to do their old work with such a greatly increased knowledge and thoroughness as to invest it practically with new life.

There is as great difference between the Mrs. Gamp of half a century ago and the trained nurse of to-day; between the governess of half a century ago—who taught all the arts and sciences as well as deportment and the use of the globes—and the high school teacher of to day, as there is between Mrs. Squeers, with her daily administration of brimstone and treacle and the woman doctor of to-day. It is not merely that new employments have been introduced, but that the old have been made new by the new spirit breathed into them. The departments of woman's work were selected and assigned as follows:

*Lace.*—Her Grace the Duchess of Abercorn.

*Embroidery and needlework.*—Lady Henry Grovenor.

*Handicrafts.*—Lady Roberts.

*Artistic designs in vestibule.*—Mrs. Robert Austen.

*Scottish and Irish domestic industries.*—The Countess of Aberdeen.

*Welsh domestic industries.*—The Lady Aberdare.

*Literature.*—Mrs. Gordon.

*Nursing and hygiene.*—Mrs. Bedford Fenwick.

*Philanthropic work.*—The Baroness Burdett-Coutts.

*Education, including medical.*—Mrs. Fawcet.

The subsection nursing is one in which English women take especial pride. They believe the work of their countrywomen in this department to be first in point of excellence, as it was, under the able guidance of Miss Florence Nightingale, first in point of time. A very complete collection was provided in this subsection of every kind of appliance and contrivance used in nursing.

Mrs. Fawcet observes:

The last quarter of a century has witnessed a complete change in the aims and methods of education for women and girls in the United Kingdom. University edu-

education has been placed within the reach of women all over England, Scotland, and Ireland, and large numbers of women have availed themselves of it and have shown not only by their educational honors, but by their subsequent work in a great variety of directions, that the labor of cultivation has not been applied to an ungrateful soil. During the same period a corresponding change and improvement has taken place in the educational work done in girls' schools. It is probably no exaggeration to say that there is not a girls' school in the United Kingdom that has not benefited by it. The exhibits sent by the girls' school company afford an illustration of the lines upon which the education of girls is now conducted.

One part of the exhibit calls for special remark and explanation. The long row of beautiful children whose mothers have had a university education has the motto appended to it: "*Non Anggli sed angeli.*" This intended to reassure the timid and to remind them that for 1,300 years the beauty of English children has passed into a proverb; so far, it has not been injured by educating their mothers. Experience, as far as it has gone, justifies the belief that education is not one of the things that harm distinctive womanhood.

From England there were exhibits from eight colleges, viz, Girton, Newnham, Cambridge; Somerville and Lady Margaret Halls, Oxford; Royal Holloway College, Surrey; University College, Nottingham; West Field College and Bedford College, London. Girton sent architect's drawing of the college buildings, students' rooms, views of the college, and pottery found in the garden at Girton. Medical education was illustrated by representations from the new hospital for women; from the Royal Free Hospital, where women medical students receive clinical instruction; London School of Medicine for Women, and from Clapham Maternity Hospital.

Among the schools especially represented were the North London Collegiate School for Girls, one of the earliest public schools in England for girls, and upon which high schools were in a degree modeled.

From Ireland there were exhibited official representations of the educational systems for both sexes. It is not generally known that the system of public education dates back to 1834-35, when there was enrolled 1.8 per cent of the population, which in 1890 had increased to 828,520, or 17.6 per cent of the population, when the expenditures reached \$4,729,082. The system is administered by a board of commissioners, in which there is no participation by local agencies, there being no local boards elected as in England or Scotland. The commissioners are appointed by the Lord Lieutenant for Ireland. The managers of the schools are generally clergymen. At the outset it was declared to be a system of education from which should be banished even the suspicion of proselytism, and which, admitting children of all religious persuasions, should not interfere with the peculiar tenets of any. Religious instruction was specially remitted to the clergy of the respective denominations. A system of model or graded schools has been introduced, of which there are 29, including 3 in Dublin. These schools now enroll about 10,000 pupils. Convent and monastery schools have an attendance of 65,548. There came into operation, under the poor law of 1840, workhouse schools, which are now attended by 9,434 pupils; there are also 52 evening schools, with an average attendance

of 1,747. Of the total of 11,119 classified teachers, 5,621 were women and 5,498 men. In the cities the schools of the Christian Brothers are numerous. Indeed, it was declared in Parliament in 1892 that the Christian Brothers had practically the education of the whole Irish city population in their hands, for their schools were situated in all the chief centers of population. Since 1878 limited Government aid has been bestowed upon secondary education; 244 schools are now said to share in this aid. Trinity College, University of Dublin, the earliest institution for superior instruction in Ireland, was chartered by Queen Elizabeth, and Roman Catholics were excluded until 1793, when they were permitted to take degrees and all tests were abolished except in the faculty of theology. The college of the Catholic University was founded in 1854.

In 1849 the so-called Queen's colleges were established in Cork, Belfast, and Galway. In 1879 the Royal University was created, whose examinations for degrees are open to all candidates, including women. According to the census in 1881, 25.2 per cent of the population were illiterate, which was reduced in 1891 to 18.4 per cent. During the same decade it may be noted that there was a decrease of 15.7 per cent in the number of children under 15 years of age. This decrease reaches 19 per cent among children 1 to 5 years of age. A writer remarks that "this decrease is not due to immigration alone, but is the proof of a check in the normal increase of the population." It should not be forgotten that the science and art department maintains in Dublin a very useful institution known as the Royal College of Science. Of the colleges founded by women for women participating in the exhibition, there were Alexandra College, Dublin, and Victoria College, Belfast. Of the schools founded and carried on by women giving advanced education there were 21 represented.

Of special schools there was the Rechelle school, Cork, for daughters of army officers and professional men; there were also 7 schools belonging to the Society of Friends.

From Scotland there were exhibits from the school board of Edinburgh, including the Royal high school, founded early in the twelfth century, and several public schools. From the same city there was the School of Medicine for Women and the Scottish Association for the Medical Education of Women, and from the school board of Glasgow there was an exhibit of plans of schools, maps, reports, drawings, etc. There was also an exhibit from Queen Margaret Medical College.

In fine arts Her Majesty the Queen sent six original sketches from nature, also a copy in water colors from an oil painting, life-size.

Two pictures in oil by Her Royal Highness Princess Christian of Schleswig-Holstein were exhibited; also a study from nature in water colors by Her Royal Highness Princess Louise, Marchioness of Lorne; also a picture by Her Royal Highness Princess Beatrice, Princess Henry of Battenberg. Among the other pictures of interest was one



by Madame Bodichon, founder of Girton College. In handicrafts the Queen exhibited two napkins made from flax spun by herself, also a hat plaited by herself, given to her granddaughter Princess Victoria; there was also a corner chair carved of oak and cut and embossed cowhide by Her Royal Highness the Princess of Wales; embroidery on linen and knitted jersey by Her Royal Highness Princess Helena; a music stool of carved oak and cut and embossed cowhide by Her Royal Highness Princess Victoria of Wales; also one by Her Royal Highness Princess Maud of Wales.

Illustrations of training in handiwork by women were numerous and instructive, especially for the students of manual training.

Education in agriculture, forestry, and veterinary is carried on less in schools and more in practical association with farm work. Compared with other nations, progress in agriculture has been only slightly promoted by State aid, but has been mainly due to voluntary associations and to private individual exertions. In 1889 the board of agriculture was created, with a president directly responsible to Parliament. To this new department was intrusted the small Government grant in aid of technical agricultural instruction and experimental research, the collection of the agricultural statistics, the administration of acts relating to the contagious diseases of animals, and all matters connected with land, such as commons, inclosures, copyholds, drainage, buildings, and the like, as well as the ordinance survey, education receiving a small share of its attention.

The Royal Agricultural Society of England exercises many functions analogous to those which are in other countries performed by the State. It holds annual fairs in different districts taken in rotation; tests inventions and enterprises, and offers prizes for improved live stock and implements and products; indeed, the society's operations embrace practically every department of rural economy. In Scotland a similar society was formed in 1884, and has kindred functions. In Ireland agriculture is fostered mainly by the agricultural department of the Irish land commission. A great impetus has been given to agricultural education since 1889 by imperial grants administered by the county councils. As results, lectures in various departments of rural economy, butter-making demonstrations, and other kinds of dairy instruction have been largely organized and are accomplishing a most useful work. All students of agriculture appreciated the great Rothamsted exhibition. The world-renowned Rothamsted experiments, commenced in 1843 by Mr. Lawes (now Sir John Lawes, Bart.), celebrated their jubilee in 1893. Dr. Gilbert joined Mr. Lawes as chemist and colleague at the beginning. Sir John Lawes has recently created a municipal trust of \$500,000 for the perpetuation of his experiments, thus continuing them as a most important contribution to agriculture. It will be seen from the above that there was no adequate representation of the work done in connection with the South Kensington and through-

out England in technical and industrial education under the science and art department. We may be sure America would have given a most hearty welcome to a full historic and comparative exhibit from the universities of Oxford and Cambridge.

#### INDUSTRY TEACHING IN DONEGAL, IRELAND.

This exhibit was under the supervision of Mrs. Dr. Hart, London, England. The building in which the exhibition was installed, as you approached it, had the appearance of a castle. In the several rooms in the interior was exhibited the actual work of spinning, weaving, making lace, etc., as carried on under the supervision of Mrs. Hart in the congested districts of Donegal. Here one obtained an idea of the rude looms, wheels, etc., as they were found, and of the improved machines introduced by Mrs. Hart.

The population of the congested districts is believed to number not less than 100,000 persons. To understand the facts in the case, one needs to turn aside from the good high roads and wander among the thatched cottages, built of rough, unhewn stone. Thickly scattered among the granite boulders are, on the treeless black bogs of the unhospitable coast, the hardy, penurious, and industrious population. The recurrent famines induced Dr. and Mrs. Hart to examine the facts for themselves. Their conclusion was that the remedy was not so much in legislation as in education. They believed that the training they had seen among the peasants in Bohemia and the Tyrol could be made effective here. She began by establishing small experimental knitting agencies, then undertook the improvement in the making of homespun. Then Donegal articles were of short lengths, of undyed wool, badly spun and woven, and of very primitive make, and there was no demand for them in the market. She found wild the same plants that elsewhere with skillful treatment furnished the best of vegetable dyes. Her first step, therefore, was to train the weavers and spinners in simple technical arts, to teach them how to extract beautiful and permanent dyes from the wild plants of the bogs, to induce and train them to spin with care and accuracy to certain counts, to improve their looms, and to instruct the weavers how to draft and twill and to make patterns. In all this Mrs. Hart's knowledge of chemistry, obtained in connection with her pharmaceutical studies, was of special service to her, as well as her extensive observation and study in the elevation of peoples elsewhere by the improvement of their industry.

She first trained a Mr. Tighe, and then started him out among the cottages on an itinerant system of technical teaching of the spinners and weavers in their own homes. The potato pot, set up in some sheltered spot among the rocks, had been their dye vat, and the leeches, heather, and bracken of the bogs were their dyeing materials. Mrs. Hart devised the Kells "embroideries," and took specimens of the improved products to exhibitions and to the markets, and soon there

was a demand for them. The attention of the Government was attracted to her well-directed efforts, and a small subsidy was granted, and the work was extended to include the training of the peasants by itinerant teachers in carpentry and wood carving and housekeeping. As the work advanced and its results justified, a school was established, and progress greatly quickened. Merchants began to find profits in connection with the new industry. A mill was established, and now it is believed as a result of these labors not less than a hundred thousand dollars are now annually paid into the congested Donegal district for homespun. In the school established boys and girls are practically trained in spinning and weaving, both by hand and by machinery, in the technic of cloth manufacture, in dyeing, drawing, wood carving, carpentry, wheelwright's work, sewing, lace making, embroidery, making cloths, and tailoring. This school, with its advantageous workshops, forms a model for practical industry schools for the agricultural districts of Ireland. But of more value perhaps than all else is the reviving of hope, the awakened intelligence, and the increased industry of the people. Much remains to be done.

#### FRANCE.

Those who had seen the exhibitions of education by France in Paris, or that in New Orleans under the supervision of Mr. Buisson, were disappointed in the French exhibition at Chicago. There were special exhibits of education from Paris in the French Building, but the documents and the pupils' work sent by the ministry were in the French section of the Liberal Arts Building and the illustrations in agricultural instruction in the Agricultural Building. In each portion of the exhibit the logic of the French mind and the excellence of principles and methods were well marked. The educational collections in the French Building were of more value to those interested in industrial and reformatory training. In the French section one was able to gain a knowledge of the school laws; the methods of administration under the ministry; the qualifications required of teachers; the functions of the several bureaus; the gradation of instruction, from the infant school to the university; the qualifications required of teachers; the place and methods of normal schools; the place and methods of examinations; indeed, there were opportunities to gain information upon almost any feature of education in the Republic in which the visitor might be interested. The studies in the subject of education could be greatly increased in value if the visitor examined, in connection with them, the economical and social statistics which were beautifully worked out in graphic form and presented to the eye in the same section. Studies equalling these in social economics have been rarely offered. The pupils' work exhibited, we were assured, was not specially prepared for Chicago. The well kept notebooks of pupils were especially instructive. Into these more permanent books the pupils at intervals



transfer their temporary work, and when they are preserved from year to year they furnish the opportunity of marking the improvement of the pupil from term to term and year to year. The careful gradation of French manual training is especially noteworthy, and so is the use of illustrations in teaching natural history and science.

The influence of the pedagogical museum can not be too highly commended. The libraries furnished for the reading of parents were well illustrated. The excellent quality of the drawing was universally commended. It will be remembered that the French commission were dissatisfied with the methods of awards adopted by the managers of the Columbian Exposition. The educational, therefore, like other features of the French exhibit, was not offered for the examination of the board of judges. Moreover, these boards were deprived of the advantage that would have been gained from the cooperation of eminent French experts in the several departments. Fortunately, educators had the opportunity of meeting and conferring with the eminent French educators present, especially in the International Congress of Education. In the elementary section Mr. Buisson, delegate from the ministry of public instruction, in discussing the question, What shall be the plan of work for a common public school? showed with what care the curriculum of public instruction is prepared. He called attention to the tendency of each one to overestimate the value of his specialty. One would make too much of arithmetic, another of geography, another of reading, another of handicraft. In the reform of education in France he gave us to understand that the greatest possible effort had been made to give each subject its proper place and amount of attention. He said:

After the important bills which do so much honor to the republican government, and by which all necessary schoolhouses and training colleges, even of the higher order, were created, and education was made free, unsectarian, compulsory, after the example of America, our educators and school authorities had to face the theory problem of the curriculum.

I must say that they took great pains over it, and here I think it is not out of place to describe shortly, to those who are less familiar with our modern French institution, a most important one in regard to educational matters. I mean our Conseil supérieur de l'instruction publique, a kind of semi-elective council of advisers of the minister of education, whose principal function is precisely to prepare or revise school programmes, school curricula of all grades.

This assembly, which is unique, as far as I know, in the world, is most liberal and representative in its composition. It was created by a law (1880), and includes, besides 9 high functionaries of the education department appointed by the head of the State, 45 members elected by the universities, learned societies, and schools and colleges of all grades. The elementary teachers themselves elect 6 representatives in the council, which is really a parliament of education and perhaps the only one in Europe.

Now, it is those gentlemen, presided over by the education minister, who sat together and slowly and carefully elaborated our curriculum, which is surely not perfect, but which was the object of much thinking and talking over.

It embraces morals and civics, reading, language (with object lessons, of course), arithmetic, geometry, elements of natural science, elements of national history, geog-

raphy, writing, drawing, singing, and gymnastics, with the addition of manual work, graduated so as to continue what was already begun in kindergarten (cardboard sloyd in small schools, bench and metal work in large ones), and also elements of commercial tuition and elements of agriculture.

The industrial and agricultural programme, which is entered upon even in the elementary schools, is of course much developed in the high school, which we call *école primaire supérieur*, and which is quite different from the classical high school, or *lycée*, which in France belongs to what we call secondary instruction. As a fact, this scheme exists in France, generalized by our centralization.

As I said, the fault of this programme, it may be candidly admitted, is, perhaps, that it is too complete; there is "*surabondance de richesse*." And of course it would be better to omit some branches than to flutter about everyone, butterfly like, for if we avoid the danger of narrowness we ought not to run in the opposite danger of overpressure and overloading.

But, in my opinion, this danger may be avoided if the teacher is well trained and keeps to the spirit, not to the letter, of the programme. There are very good preambles explaining the curriculum in the same way as those which many of your city and State superintendents, if I remember rightly, place before the school regulations issued by the board.

Here are, for instance, the instructions to the teachers about the mental or intellectual part of the school curriculum, subdivided into the three studies—physical, intellectual, and moral. In conclusion, if the school programme is thus understood with its objective instructive character, less bookish, less scholarly and formal than in former times, and worked in that spirit by the teacher, if the school time is not cut up into small sections, if reading is made the means by which a great portion of the supplementary subjects are introduced into the school routine, even an extensive curriculum may be carried out without confusion and overpressure.

But, of course, the success depends a great deal on the teacher; all will be easy if he or she carefully prepares a lesson on chemistry, physiology, or botany, for instance, by diagrams, pictures, and specimens. For this purpose school museums are invaluable and can scarcely be dispensed with. As to manual work, either cardboard work, or woodwork, or ironwork, or modeling with clay, or gardening for boys, and needlework, cooking, and ironing for girls; let those occupations be advocated as most necessary whenever the school authorities can afford to supply the teacher with the necessary implements, for even when this kind of occupation does not serve to turn the children's tastes toward adopting industry and trade as their avocations, they have a most beneficial influence, first, as derivative from overpressure in mental work; secondly, from a social point of view in enforcing respect for the dignity of handicraft and manual labor; thirdly, on purely pedagogical grounds. But before the age of 10 or 12, if they are added to the school curriculum, means must be devised so as to bring them partly before or after the regular school hours, or else the children's time for the most necessary branches, those which bear the examination for the certificate of elementary studies in France, would be insufficient. When parents leave their children at school until they reach 14 years of age, manual work or scientific notions necessary to agriculture and gardening are most useful, for it is between 12 and 14 that the children show a great fondness for those active occupations and are capable of making some real progress in them, and, besides, it is a critical age, a turning point in life, when they are likely to choose their avocation, and a well-ordered course in manual or agricultural work may have a very decisive influence over their destiny.

#### THE GERMAN EMPIRE.

The exhibits of the German Empire were numerous and most interesting. They were, on the whole, not excelled by those of any foreign country. It was specially appropriate that German education should

have fair attention, and it was much to be regretted that the space assigned it was not all that could be desired. Germany, through its education, has taught the world. All other progressive nations have taken lessons of German schoolmasters. America has not been behind in laying under contribution either their learning or their methods. Different German-speaking States have sent their representative teachers abroad to every section of our land. But from no State have they come in larger numbers than from Prussia. Thither, too, many American educators have hastened for their own preparation in the management of schools. Prussian schools chiefly occupied the reports of Bache, Barnard, Mann, and Stowe, who did so much a generation ago to shape our educational ideas and activities. It is well known that Rev. Charles Brooks traveled up and down Massachusetts informing, by his lectures, the people of the advantages of normal schools and urging their establishment before the first was opened at Lexington under Father Pierce by the aid of Mr. Dwight's \$10,000. It is perhaps also well known that Mr. Brooks gained his knowledge and inspiration from conversations with a German gentleman whom he met on board a vessel crossing the Atlantic. Not a department of our school work has failed to receive aid from what has been done in Germany. It was specially pleasing to Americans that a gentleman so eminent as Dr. Stephan Waetzoldt, a professor from the University of Berlin, should represent German education as the chief commissioner of his excellency the Prussian minister of education. It should be kept in mind that the German Empire, like our own National Government, is made up by the union of different States. As with us, so there, there is no national system of education. Each State directs its own school policy. American visitors would have enjoyed a representation from all the German States, but they recognized a fitness in the fact that this great German educational exhibit should be so largely from Prussia. Notwithstanding the space assigned to education was so limited that to give the material a reasonably fair display it was necessary to erect a second gallery above the main gallery where it was placed, its installation made the most of the opportunity. Those were most fortunate who enjoyed the advantage of Dr. Waetzoldt's explanations. What might seem to the casual observer as too mechanical in the way of system, regulations, books, methods, and illustrations became only the material conditions, helpful to the spontaneous efforts of teacher and pupil. The theory of German education is indeed compulsory. The State fixes the conditions, and the parent must comply. The teacher must be qualified and do his work up to a high standard, according to regulations. The pupil must attend and conform in conduct and study to requirements. Both pupil and teacher must be workers. The spirit of military drill and precision is manifest.

School reports are not published as frequently and as fully as they are in this country. The constitution of forty years or so ago contains



the fundamental principles of education upon which the system rests. But the special legislation expected to follow these educational provisions of the constitution has never been enacted, the orders or regulations of the ministry sufficing. The high order of education depends less upon the free choice of parents than upon the vigorous administration of the ministry, and the universal excellent qualifications of the teachers. The constitution makes education compulsory, provides the ways and means, allows none to teach but those whose qualifications reach the required standard, and teachers and pupils and parents are required to discharge their respective parts in the work of elementary education. The expenses of the schools are met by payments from the State treasury and from the local community, the State treasurer paying 18 per cent and the local communities paying 82 per cent. The amount paid by the State is derived mainly from taxation, but in part from the income of permanent school funds. Formerly tuition fees were required; but a recent tendency to make the schools free has manifested itself, and since 1888 tuition has been borne in part or in whole by the Government. Notwithstanding the compulsory character of the State school laws, there is great freedom of local action in certain particulars, and especially in cities. There is supervision, but there is less expected of it than in certain American States. Indeed, as has been said, the superior qualifications of the teachers render it less necessary. The profession has the same rank as that of medicine or law or the ministry. Women are allowed to be teachers, but of the 75,000 teachers in the elementary schools only 10.6 per cent are women, and 89.4 per cent are men.

There are 106 normal schools for men and 8 for women. Of these 114 schools, 38 were Catholic, 72 Protestant, and 4 were mixed. The course of study extends over three or four years. No foreign languages are taught. The common subjects of instruction are reviewed, and great emphasis is placed upon pedagogy. The teacher enters the profession for life. He is as much an officer of the State as is a military officer. After his active service ceases a pension is provided for him; and if he dies his widow and orphan children receive it. The compulsory school age is from 6 to 14. Schools continue during week days, but are closed the afternoons of Wednesday and Saturday, session generally continuing from 8 till 12 and 2 till 4, or 8 till 1 and 3 till 4. School-houses are not generally equal to those in America in elegance and convenience. Benches are generally long, with desks attached. Single desks are rare, but great improvements have recently been made in school architecture. The exhibition made manifest the great superiority of the German schools in apparatus, charts, maps, specimens of natural history, models, instruments, etc. These aids to education are not collected haphazard. They accord with the best pedagogical principles and are furnished by the school officers or selected by the teachers who know what is fit and appropriate. Great care is given to the

conditions of health. The course of elementary studies corresponds very much with ours, perhaps placing more emphasis on drawing and natural or nature studies, which are receiving more attention in American schools. Text-books are less used; instruction is more largely oral. The scientific method is manifest in the text-books and in the oral method. The thorough qualification of the teacher saves him from extravagances in the treatment of subjects and from the cultivation of the faculties of his pupils out of balance. The reasoning faculty is not sacrificed to the memory. The teacher is always on the alert and generally on his feet. Instruction in school hours is unsectarian. Religious instruction is provided in other ways, according to personal choice, whether Protestant, Catholic, or Israelite. If the schools are of mixed faith, those of one belief retire while those of the other receive instruction. Much less is made of examinations than in this country. Discipline is strict. The docility of German children is often the subject of remark. While woman does not hold the position as teacher that she occupies in this country, many facts connected with the exhibition indicate the increase of opportunities for her instruction. The models of school baths was a subject of general surprise; yet it is true that the bathing pool connected with the gymnasium is found in America. However superior the scientific treatment of subjects in German text-books, they are far less attractive to the eye than American in paper, printing, and illustration. As might have been expected, the collection of works on the history, theory, and practice of teaching was large. The exhibition made it clear that Germany knows how to honor those who do the people great service. The busts of her great educators emphasize the personality of educational progress with excellent effect.

WOMEN'S EDUCATIONAL UNION, BRESLAU, GERMANY.

This interesting exhibition in the Women's Building was presented in five different parts. The first included plans, photographs, etc.; the second, industrial school work in embroidery, monograms, millinery, dressmaking, mending, darning, and patching; third, training school for nurses, including especially sewing with hand and machine on articles for use in nursing babies and in dressmaking for children; fourth, specimens of work from the seminary for teachers of needlework, united with training for kindergarten teachers; fifth, school for photography, including views of the city and photographs of the pupils of the school for housekeeping, school for cooking, and kindergarten and training school for nurses.

AUSTRIA-HUNGARY. •

These countries, united under one chief ruler, are, however, separate governments in other respects—that is, each has its own legislature, executive department or administration, and judiciary. Neither at Chicago answered the expectation of visitors either in the exhibition of

articles illustrative of education or in the presentation of educational information. Yet there was much in the commercial and industrial exhibit of the Empire to suggest to thoughtful minds the condition of instruction among the people. Both commerce and industry begin to respond to the increase of educational efforts in both countries. But the presence of rude methods and implements of industry among a considerable portion of the common people point to the greatness of the task which remains to be accomplished. In estimating the progress made it should be remembered that little had been attempted for the people generally before the revolution of 1848. From that period we find educational enactments and an educational ministry. In both countries religious questions are a great source of embarrassment. In each country there is limited local participation with the ministry in the direction of school affairs. The constitution, which guarantees "all nationalities equal rights," also affirms that "each has the inalienable right to secure and maintain its language." This results in the multiplication of languages, often in small districts as well as large, and thus greatly hinders the progress of education.

#### AUSTRIA.

All statistics at hand are inadequate. Of the 24,000,000 set down in round numbers as the population of Austria, 3,200,000, or about 13.3 per cent, are in the schools below the universities. Public regulations give early attention to child life, but they are not efficiently carried out. Definite provision is made for day nurseries for children of "working people for daily care and suitable occupation and to accustom them to cleanliness, orderliness, and good behavior, as well as to instill into them a love of work." Infants under 3 years of age are not received. Elaborate regulations also provide for kindergartens, attendance, methods, aims, and qualifications of teachers. Vienna has led the way in educational progress. Some 546 kindergartens are reported. Of the elementary schools over 50 per cent are ungraded. Of these 17,276 public elementary schools, 19.4 per cent, are half-time or half-day schools. Pupils are entitled to instruction without distinction of sex, and also without distinction of religious belief whether Protestant, Greek, Roman Catholic, or Jew. The language of instruction is German in 41 per cent of the public schools; Bohemian, in 25.5 per cent; Polish, in 9.6 per cent; Italian, in 4.9 per cent; Servian, in 1.8 per cent, etc. Of the 60,126 teachers in the public elementary schools, 76 per cent were men and 24 per cent women. Of the women, 6,930 taught only knitting, sewing, embroidery, or other handiwork to the girls twice a week, and of the men, 13,875 were teachers of religion, reducing the total to 39,321 who are engaged in teaching letters. Of every 100 persons in Austria 14.1 are of school age—6 to 14—but only 11.9 per cent are enrolled in school. The execution of the compulsory education law was attended with nearly 200,000 sentences, either in imprisonments or fines; the resist-



ance is largely among the Slavic population. Physical training is taught in over 11,000 schools and industrial in over 10,000. Over 13,000 schools have libraries and 428 districts have pedagogical libraries.

In 1889, 55,846 students were enrolled in the schools of secondary instruction.

Austria has 8 universities, 6 polytechnic schools, 1 of agriculture, 3 of fine arts, 43 of theology, and 69 normal schools. During 1889 there were delivered 3,266 lectures in the universities; during the winter semester they were attended by 15,562 students; of these Vienna had 6,371.

The 6 polytechnic schools were attended during the winter by 1,724 students, showing a considerable falling off since 1885, when the attendance was 2,026; the agricultural for the same term was attended by 246, which also shows a considerable falling off; the two mining schools enrolled 97, and the schools of fine arts 433. Of the 43 theological schools 39 were Catholic and 4 of other confessions. The 69 normal schools have an attendance of 9,415 students. Forty-two of these schools were for men and 27 for women. In 39 German was the language of instruction, in 12 Bohemian, in 6 Polish, in 2 Italian, in 2 Servian, and in 8 several languages were employed. In commercial schools 10,000 students were enrolled. In 1889 there were reported 619 special industrial schools, with an attendance of 64,000 students. There were enrolled in music schools 13,979 students, and in schools of forestry and agriculture 2,618.

#### HUNGARY.

The interest in all which concerns Hungary, created in America by the visit of Kossuth, has by no means disappeared. A full exhibition of education and a full representation of its facts would have been most welcome at Chicago. The degree of self-government attained by Hungary in 1866 was followed in three years by special Hungarian direction of its own school affairs. By the census of 1880 the population was 13,749,603, and the school population between the ages of 6 and 15 was 2,468,624, and there were enrolled in elementary schools 2,015,612, or 14.66 per cent of the children of school age. The enforcement of compulsory attendance is in the hands of communal authorities. There was expended on schools 39 cents per capita of the total population. In 1889 the State maintained 25 normal schools and the church 47, and the total attendance was 3,781 students, of whom 2,666 were young men and 2,118 young women. There were in attendance upon infant schools 28,023 boys; girls, 21,043; total, 59,066. There is reported a need of 5,000 additional schoolrooms to prevent overcrowding. Generally the rooms are furnished with blackboards, aids to teaching arithmetic, globes, wall maps, models for drawing, and other aids to instruction. There are 7,033 educational and juvenile libraries. Of every 1,000 schools 538 have a school garden; 2,874 schools have halls for gymnas-

ties, and 7,855 have grounds for open-air gymnastics; 76 per cent of the elementary teachers have their residences connected with the school-houses. There were 43,670 students receiving secondary instruction; of these 45.7 spoke one language and 54.3 per cent spoke two or more. Hungary has 3 universities—in Klausenburg, Agram, and Budapest; 1 polytechnic school, 11 law schools, and 53 schools of theology. The number of students in attendance on the universities was 4,098, on the polytechnic school 616, on the law schools 792, and on the schools of theology 1,855. According to the report of the same minister, Hungary had 278 courses for industrial training or instruction in trades, with 46,288 students; it also had 83 workshops for home industries with 5,466 apprentices; it had 75 elementary and 22 secondary commercial schools, the former having an attendance of 4,086 and the latter 1,870. Students in schools for midwifery numbered 472. A normal school for teachers of drawing was attended by 90 students; a similar school for fine arts by 110 students; a school for music and drama by 136, and the schools for defective classes had 3,210 pupils. The total annual appropriation for 1891-92 was reported to be \$3,643,762.

#### ITALY.

Italy as a government did not exhibit its education at Chicago. Public attention is most attracted to what is said in current publications (1) of the appropriations to education, which, however inadequate, have gone up from \$9,000,000 in 1872 to \$18,500,000 in 1890, and (2) to what is said of Italian illiteracy, which has gone down in a similar period from 78 per cent to 50 per cent.

The high position of Italian art gives the world some notion of what is done for its cultivation, while the frequency with which workmen from Italy are found who have been trained in some trade school conveys some idea of the dissemination of industrial education. The efforts of Cavour in behalf of the latter are well known. Indeed, that great statesman did not fail to comprehend the part that education must perform in the unification of Italy. He believed that the enlightenment of the people would enable them to rise from the degradation to which they had sunk, and increased facilities for their instruction marked every step of progress. Schools established for the benefit of the soldiers have done a great work. Their enrollment in 1891 reached 369,000, and the total enrollment of elementary schools 3,306,266. Secondary instruction is imparted in nautical, commercial, agricultural, and other industrial and normal schools and in classical schools. The attendance on secondary instruction advanced from 43,798 in 1871 to 85,600 in 1890 in classical and technical schools. There are 134 normal schools, of which 26 rank as inferior and 108 as superior; 36 are for men and 98 for women. Under the new régime the education of women has made great advance in Italy and her condition has correspondingly improved, but much remains to be done. The progress of the instruc-



tion in agriculture has done much to restore barren lands to productiveness and increase the fruits from the soil, and thus promote the comfort of the people. To the world outside of Italy its universities have long been the most conspicuous illustrations of its educational opportunities. There are 21 having the faculties of law and jurisprudence; 11 philosophy and literature; 20 medicine and surgery; 15 mathematics and physics. As aids to university work there are 239 laboratories and museums. Important reforms in administration and instruction have been for some time under consideration. Instruction in the fine arts and in music have long been highly regarded in Italy. In connection with education special attention is paid to antiquities. The unification of educational administration is well established. At its head is the minister of public instruction; he is assisted by a council composed of 22 members; associated with the ministry there is a royal commission of 5 members; cooperating with the ministry are 69 provincial councils. In the leading cities there are already 6 female inspectors; 6 special experts are charged with the care of antiquities, monuments, excavations, museums, and art galleries; 6 others license the exportation of antiquities and fine arts. Infant asylums in Italy have long contained large numbers of children to which a limited measure of instruction was imparted. Of late the methods of Froebel have been introduced to great advantage. In 1889 there were 2,818 of these institutions containing 268,954 children. It is hoped that ere long kindergarten methods will prevail among them all.

#### DENMARK.

##### COMMON SCHOOLS.

The present arrangement and administration of these schools is founded on two laws from 1814, which have, however, been altered by later decrees. One of the said laws regulates the common schools in towns, the other those in the country, but the fundamental principles are alike for both.

Still, it must be noted that in the course of some twenty or thirty years most of the greater towns have themselves reorganized their common schools, which nowadays give the pupils an amount of knowledge that greatly surpasses the standard fixed by the laws. All children at the age of 7 to 14 years must attend some school, unless their parents or tutors have them taught satisfactorily in some other manner. Sometimes children are permitted to leave school at the age of 13, provided they have attained the knowledge and ability they have to acquire during their school time. Parents who neglect to send their children to school are fined.

In the common schools are taught religion, writing, reading, arithmetic, singing, gymnastics, history of Denmark, and geography. Besides, the teachers have to teach the children as much as possible of all that will counteract prejudices and develop their ability for work. The



aim of the school is to make the children good Christians and citizens, and to give them such knowledge and powers as will serve this end.

Every parish is to have a school, but several of them have more than one. This is necessary, partly because the law forbids any child to have a longer way to school than 1 English mile and partly because no single teacher must have a greater number of children than 100 in the country or 80 in the towns.

In towns every school often has two teachers or more, but in the country it is common that one teacher has two schools, namely, a primary school for children from 7 to 10 years and the usual common school.

Every parish has to pay school expenses, but the Government gives yearly 400,000 krentzer to the salaries of teachers and 365,000 to the school funds, out of which are paid pensions for teachers and contributions to the salaries of assistant teachers.

Every appointed teacher who has held a situation for ten years is entitled to a pension in case of his being unable to work any more. After ten years of service his pension will be half of his salary, and after twenty-nine years two-thirds of it.

Teachers' widows only receive one-eighth of the salary, but every teacher has to secure his wife some life insurance, and the Government takes care that he performs this duty.

Every parish or town has its school board, which works under the superintendence of the Government. The supreme authority under which resort all the schools of the country is the ministry of church and schools.

#### STATISTICS.

According to statements from reports of 1880 the number of schools in the country was: (1) Public common schools, 1,586, with 3,103 teachers, of whom 400 had passed no examination; women teachers, 160, of whom 142 had passed no examination; pupils, 203,107. (2) Private common schools, 270, with 181 teachers, of whom 94 without any examination; women teachers, 96, 94 without any examination. (3) Private primary schools, 168; teachers, 41; women teachers, 127; pupils, 2,355.

The expenses of the parishes to common schools in the country were about 3,000,000 kroner. To private common schools was given about 10,000 kroner, and to primary schools, 3,000 kroner, besides 8,000 kroner to sewing schools.

In 1890 there were in towns (Copenhagen not included) 118 common schools, with 601 teachers; 463 women teachers, and 40,364 pupils. The school expenses in towns were in 1880 about 10,000 kroner; 1890, about 12,000 kroner.

#### THE HIGHER SCHOOLS.

The Latin schools were formerly superintended by the board of the university, but since 1848 they have been laid under the ministry of church and schools. A bill of Parliament is necessary to change the material foundation of the higher schools.

The schools are superintended by a board of 3 members selected for three years by the Government. They have special superintendence for gymnastics and singing.

The number of public Latin schools is 12. Only one of them, that of Sorö, is a boarding school. The number of pupils is, for the present, 1,863.

At every school is appointed a rector, several head masters, and assistants. The salary of the rector is 4,000 to 5,000 kroner. The teachers are all entitled to pension; their widows, too.

The conditions on which a boy is admitted to a Latin school are that he must be 12 years of age and have a sufficient amount of knowledge.

Most Latin schools have founded preparatory schools. The schools have 6 classes, each of one year. As a rule the number of pupils in a class is not to surpass 25. The daily school time is not divided, according to a general wish of the parents. It is six hours a day—in summer from 8 to 2, and in winter from 9 to 3 o'clock, with ten minutes' play every hour and twenty minutes for breakfast. Only at Sorö is the school time divided.

The aim of the Latin schools is chiefly a sound general culture, besides to prepare the pupils for the university, and finally to give them the scientific education which is also necessary in other positions.

The instruction falls into two subdivisions—the linguistic-historical and the mathematic-scientific.

The following disciplines are taught: Danish (including Old Icelandic and Swedish), German, French, English, Latin, Greek, religion, history, geography, arithmetic, science, drawing, writing, singing, and gymnastics. French is considered the most important of living tongues. English is only taught as an experiment. In Latin 120 chapters of Cicero must be read, one book of Livius, one of Tacitus, two books of Virgil's *Æneid*, the letters of Horace and two of his odes, besides as much cursory reading as will be equal to two books of Livius. In mathematics the pupils learn arithmetic and algebra, stereometry, plane geometry, analytic geometry, etc.; in science, chemical and mechanical physics, and astronomy.

There are taught gymnastics, military drill, swimming, and sometimes dancing and sloyd.

Except in the two highest classes the home work is not to exceed three hours a day. The pupils graduate publicly every year.

Part of the pupils graduate from the fourth class, and then have the same rights as those who have passed the so-called "*Præliminærexamen*," which will be mentioned later on.

From the sixth class the pupils graduate to the university. Those who belong to the linguistic-historical branch are examined in Latin, Greek, French exercise, and science; the mathematic-scientific, in mathematics and science. Common for both are Danish, French, German, or English, and history.

Those who have graduated in the mathematic-scientific branch have access to the polytechnical school, besides to the university.

The payment for instruction at the public Latin schools varies from 120 to 170 kroner yearly. It is not difficult for poor, diligent pupils to obtain stipends. Gratis instruction can be given to one-sixth of the pupils. Pupils who have been taught privately can obtain access to the university by passing an examination either at a public Latin school or at a private one which has the right of graduating pupils.

A private Latin school can be founded with the permission of the King. The Government controls the examinations passed there.

There are at present 22 private Latin schools, of which one is a school for girls, managed by a woman, as is also one of the boys' schools. The number of pupils in these schools is 2,221.

"Præliminærexamen" is an examination introduced in 1881 instead of different smaller and greater examinations. It can be passed at public and at private schools. The pupils graduate in Danish, English, German, or French; history, geography, mathematics, and science. Religion, writing, drawing, gymnastics and singing are generally taught. This examination gives access to the Veterinary and Agricultural College, the lower law school, the school for pharmacy, for dentists, for officers, to appointments in the post and telegraph service, etc. With several additions it will also give access to the university.

Women are not admitted as pupils to the public Latin schools, but they are allowed to graduate there. From 1882 they have the right of passing the "Præliminærexamen" and many secondary schools take pupils of both sexes. "Præliminærexamen" gives to women the same access to schools and examinations as men have, but it gives them no right to public appointments.

Women are admitted to the university on the same conditions as men. They may also pass all examinations at the university except that of theology; here there is a special examination arranged for them which does not give them any right of preaching.

To the university belong a great many donations for the benefit of poor students, houses where they can live free, etc.

There is a library, a botanical garden, a zoological and a mineralogical museum, an observatory, several laboratories, etc.

The university is a State institution to which belong several funds, consisting partly of lands, partly of money.

Denmark has only one university, founded 1478 by King Christian I. It is superintended by the ministry of church and schools. Before a professor is appointed the special faculty is consulted. If there are more solicitors a public competition will take place. The election is to be confirmed by the King. Everybody who has acquired the degree of a doctor has the right of giving lectures at the faculty to which he belongs.

All the professors form an association which assembles four times a week or whenever the rector of the university wants it. This association has to choose the rector.



There are five faculties—the theological, the medical, the philosophical, the mathematic-scientific, that of law and political economy.

The number of students who in 1893 graduated to the university was 400. The students must have graduated from a Latin school; they have liberty to hear whatever lectures they choose.

When the professor permits it, others, too, who do not prepare for any examination, may attend his lectures.

All lectures and exercises, belonging to studies of examinations, are gratis. The academic year is divided into two semesters of four months each.

After the first year's study, every student passes an examination of philosophical propædæutic. The students are examined now and then to try their diligence and progress.

Every student must prove that he has followed a certain number of lectures before he is admitted to the final graduation. The students are examined by their own professors. Censors are appointed and paid by the Government.

Besides the here-mentioned schools, Copenhagen has a very large and excellent State university for farmers, gardeners, and foresters, another for engineers ("polytechnic" school), a manual training school ("Technic school"), and an academy for pharmacists. Only the first of these schools admits women (till now only one woman has graduated there). Four State normal schools for teachers (in the country) admit only men, while a number of private normal schools educate either female or male teachers. A special Danish kind of schools (adopted, though after Danish pattern, by Sweden and Norway) are the so-called high schools where in winter young men, in summer young women, sometimes both sexes together (mostly of the serving classes), seek a relief from manual labor and a renewal of their school knowledge, while still the chief object of these schools is to give them a more ideal view of life than is generally found among hand laborers. In some of these schools the course is longer, and then farming or manual training may form part of the curriculum. Generally the chief part of the teaching is oral (lectures), no part of it is compulsory, and no examination ever takes place. These schools are from the beginning wholly due to this private initiative of the enthusiastic followers of the poet-pastor Grundtvig (1791-1877). For years they were considered dangerous, as fostering too much political independence. In later years they have been imitated by different more conservative factions. Now it is thought that they may counteract socialism in a happy way, and they accordingly are now supported by the Government.

#### SWEDEN.

Sweden exhibited especially instructive series of models illustrating Miss Hulda Lundin's system of teaching girls sloyd or needlework in the public schools of Stockholm, where she is superintendent of this department of instruction.

The models were made by pupils in the public schools (primary and grammar) of Stockholm (age 7 to 14 years). The models were well executed and were so installed as to convey a clear idea of the system.

Miss Lundin says:

The aim of the instruction of girls in sloyd is: (1) To exercise hand and eye; (2) to quicken the power of thought; (3) to strengthen love of order; (4) to develop independence; (5) to inspire respect for carefully and intelligently executed work; and at the same time (6) to prepare girls for the execution of their domestic duties.

The instruction has two objects in view: (a) It shall be an educational medium; (b) it shall fit the girls for practical life.

Experience has proved that the desired results can be best reached by (1) practical demonstration of the subject, (2) progressive order with regard to the exercises, and (3) class instruction.

(1) Practical demonstration in sewing is accomplished by means of a sewing frame, and in knitting by means of large wooden needles and colored balls of yarn. At the same time, blackboard drawings are constantly being made.

(2) The exercises are planned and carried out in the most strictly progressive order, so as to enable the pupils to execute well the work required of them.

(3) The instruction in sloyd should, like that in other branches, be given to the whole class at the same time, otherwise the time which the teacher could devote to each pupil separately would be insufficient to secure the desired results.

In order to illustrate the progress from the simple to the more complex in the teaching of sloyd (this term embraces all kinds of handiwork) we give the following class divisions of the subjects which are in use at the present time in the public schools of Stockholm:

#### STANDARD 1.

1. Plain knitting with two needles—a pair of garters.
2. Plain knitting—a pair of warm wristers.

#### STANDARD 2.

3. Plain knitting—a towel. Practice in the different kinds of stitches; running, stitching, hemming, and overcasting—a lamp mat.
4. The application of the already named stitches—one small and one large needle-work bag.

#### STANDARD 3.

5. A needlework case. Simple darning on canvas—a mat for a candlestick.
6. An apron.

#### STANDARD 4.

7. Plain and purl knitting—slate eraser and a pair of mittens.
8. A plain chemise.

#### STANDARD 5.

9. Knitting—a pair of stockings.
10. Drawing the pattern, cutting out, and making a chemise.

## STANDARD 6.

11. Patching on colored material.—Plain stocking darning.—Buttonholes.—Buttons made of thread.—Sewing on tapes, hooks and eyes.
12. Drawing the pattern, cutting out, and making a shirt or a pair of drawers.

## . STANDARD 7.

13. Fine darning and marking.—Drawing the pattern for a dress.—Cutting out such articles as are required in standards 2 to 4.
14. Drawing the pattern, cutting out, and making a dress.

*Time given to needlework per week.*

	Hours.
Standard 1.....	2
Standards 2, 3, and 4.....	4
Standards 5 and 6.....	5
Standard 7.....	6

Miss Lundin calls attention to the fact that the simple, logical, and progressive plan adopted in teaching other branches has been too much neglected in manual training. She says it is not sufficient to give out lessons to be committed to memory; they must also be thoroughly explained by the teacher; suitable mediums of instruction must be sought and class teaching maintained in order to secure thoroughness and inspire interest. As soon as any exercise is well learned, it should be applied to something useful either in the school or home. In this way the pupil's interest is awakened and strengthened. The child will, in such cases, see the result of its work such as it can understand; moreover, the parents' sympathy will be won.

She holds that the teachers by appealing to the whole class at once can secure the attention of the pupils and awaken lively interest. She can impress ideas of form, size, and the reason for doing this and not doing that, thus making the instruction both developing and educating. But class teaching should not be all. The teacher must not guide every step. It is only the new in each step that should be explained to the whole class. When the pupils have learned through explanation and illustration what they must do, they should work independently of each other, and the teacher should give attention to them separately, seeing that each performs correctly the required exercise. She should observe the positions of the body and the hand, also whether the pupils hold the work at a proper distance from their eyes, so that they may not gain skill at the expense of their eyesight. She repeats with emphasis that the teacher of manual work should not only instruct, but educate the pupils as well. Therefore the choosing of the teacher is not an insignificant matter. Besides manual dexterity, teachers should be possessed of pedagogical skill. Therefore for the training of teachers in manual training, either special normal schools should be established or, what is without doubt better, existing normal schools should place manual training in their curriculum on an equal footing with other branches of education. That is now done in Sweden.



She holds, too, that not only girls, but the younger boys should be instructed in girls' sloyd. The boys should be taught this because it introduces variety and interest, trains the hand and eye, and renders them able to meet many possible conditions of necessity.

The Swedish or the "Ling" system of gymnastics can be briefly characterized as follows:

The movements in their nature and their number are founded on the human organism's natural need of exercise, and the possibility of its perfect development to health and capability of work. The gymnastics can also preserve or secure a development already gained.

The aim of these gymnastics is to obtain as perfect health as possible; that is, a harmony between the different organs and between their functions. Skillfulness has but a secondary place, but it is obvious that the human body will best receive the harmonious development for which it is fitted when the organism itself is used in its own perfection in relation to physiological laws.

The numerous exercises which come into use in these gymnastics are divided into families, groups, or tables arranged according to likeness in the effects produced upon the different organs.

All the movements in one such group are arranged in relation to the degree of exertion they cause. It is also a necessity, in the application of the exercises, to use the different movements of a group in the progression thus obtained; that is, the easier movements must precede those that are more difficult in such a manner that a coming movement is well prepared and introduced by the more simple exercises in the same family. This method most easily promotes vigor and prevents straining.

The exercises ought to be practiced daily, each lesson to be composed of a harmonious collection of movements chosen from the various groups. This produces most completely a proportional development of all the organs.

The Swedish system of gymnastics is, more than any other, founded upon anatomical and physiological laws. It uses no movement without a knowledge of its effect, and, having always an end for its proceedings, it has acquired the right to be called rational.

It contains a great number of movements to be found in no other system, and these movements are adapted in the manner most suitable for the wants of the body. The apparatus in use has been constructed in regard to this view, and is so arranged that it facilitates the movements. Briefly, the movements are adapted to the body, and the apparatus has received a form that suits the movements.

The apparatus in a gymnasium is arranged with a view to free space and its own accessibility. In general, it can be said, the Swedish apparatus and its arrangement in the gymnasium facilitate its use by a great number simultaneously. From 100 to 200 boys can be seen taking gymnastics at the same time in a large Swedish gymnasium with but

one master present. The greater the similarity in age and development that exists among the pupils, the greater the number that can receive simultaneous instruction in gymnastics.

#### NORWAY.

This exhibit contained copies of pattern drawing and sewing of boys' clothing, also of women's and children's dressmaking, by Amalia Johannesen. Miss Rosing exhibited dressmaking and needlework as a common school branch, including plans and drawing for exercises in cutting and economizing, published by contribution by the Norwegian Government. One publisher presented an extremely interesting collection of school material, showing how largely instruction in Norway is aided by illustrated pictures. To aid in teaching religion, there were portfolios of biblical pictures, from the Old Testament and the New; for use in connection with arithmetic, a portfolio of metric measures and weights; to aid in writing and drawing, similar illustrations. The illustration of history, geography, natural science, sewing, and dressmaking were specially effective.

A watchmaker exhibited a text-book on the art of watchmaking in our times, with engravings and drawings. A teacher of deaf-mutes exhibited (1) drawings for instruction in handicraft, and (2) a school desk and bench for combined common school use and instruction in manual training.

A systematic exhibit of instruction as given in the elementary and secondary schools and the university and professional and special schools was wanting.

Nothing from Norway attracted more attention than the *Viking*, under Capt. Magnus Andersen, which left Bergen, Norway, April 30, and which successfully overcame all difficulties of an ocean passage and reached Chicago safely, to the great delight of all visitors.

In 1880 a vessel was exhumed from Gog, a mound at Gogstad, near Sanefjord, in southern Norway, which is now preserved in the university in Christiania, and it is supposed dates from about the year 900; in a sepulcher in the vessel were found human remains. The *Viking* was an exact facsimile of this old vessel, and her successful sail across the Atlantic has a most important bearing upon whether the Norsemen could have crossed the Northern Atlantic in the ninth, tenth, and eleventh centuries.

#### RUSSIA.

Anyone familiar with the fact that in the vast Empire of Russia those in attendance on schools below universities were 2.6 per cent, as against 22 per cent in Bavaria, 17 per cent in France, and 21.3 per cent in the United States, was unprepared to expect an exhibit of education so instructive and interesting from Russia as was found at Chicago. Few, moreover, were able to comprehend the relation of the several

schools to the authority by which they were directed. Indeed, a comparatively small share of the Russian educational exhibit was catalogued in Department L, liberal arts, group 149. It may be said that far from the total of the educational activities of the Empire are under the ministry of public instruction. Under the ministry of finances was exhibited the work of the trades schools, including (1) programmes of blacksmiths' and locksmiths' handiwork, samples of work, drawings and designs; (2) programmes of turners' work, and samples; (3) programme of joiners' work, and specimens, such as cupboard and tables; (4) drilling lathes; (5) force pumps; (6) cross-planing lathes; (7) gear-turning lathe. Under the ministry of communication are important schools. The pedagogical museum is under the ministry of war.

Through the several ministers who communicate directly with the Czar, he conveys his imperial will to the vast Empire, embracing one-seventh of the surface of the globe. Under the ministers are a variety of subordinate grades of authority reaching every corner of the realm and every soul in it. There is (1) the Holy Synod, directing religious affairs; (2) the ruling Senate, with its nine subdivisions; (3) the council of state. Looking at administration we see a series of subdivisions, called governments and districts. Each governor-general represents the authority of the Czar, both in regard to civil and military affairs. Here and there the deliberative element appears. The heads of families in a village community may assemble and deliberate and elect their own elder. These village communities may unite in a canton, and each canton has a chief officer elected by a cantonal assembly; but at every step the action of these subordinate grades of authority is limited by the will of the Czar, which is supreme over all. As a rule, class distinctions are marked, and the diversity of population is great.

In adaptation to this complexity of governmental forms, the ministry of education organizes its system of schools, dividing the country into twelve circuits or divisions, with a chief for each, whom we might call curator, who has assistants or inspectors by which he reaches every school. Each public school is organized in accordance with the edict of 1874, which modified that of 1862. Schools may be originated by individual or private enterprise, but must conform to established regulations. The types of schools are numerous, but the universities, gymnasias, progymnasias, polytechnic, and real schools correspond in a measure to those of central Europe. The age of attendance varies greatly. No uniformity is observed in the provision of separate schools for boys and girls. There has been a gymnasium for girls since 1858. The higher education of young women has been looked upon with much favor, and especially their instruction in medicine. It has been stated, "the Russians have become so alive to the value of women physicians that the Imperial Government has granted \$200,000 for a medical school for women, to be established at St. Petersburg, and that the site has been given by the city." The fact that only 20 in 100 of those who



enter the army can read and write does not prepare one to expect the high order of scientific ideas found in many of the exhibits of educational institutions, methods, and appliances. It would be difficult to name a government more vigilant in laying the progress of the world in science under contribution for the benefit of its administrative purposes. Everywhere in the Government may be found evidence of the presence of the most advanced scientific attainments; especially is this true of the army. As one meets these indications he is disposed to exclaim, If these scientific attainments could become universal among the people of all classes, what a multiplication of the power of the Empire would the world witness! The latest and fullest statement of the expenditures for education available are those for 1885, making under the minister of education \$11,394,339, and under the Holy Synod and minister of war, navy, finance, of the state domain, of the interior, of communication, of justice, of foreign affairs, and the director of the royal stud, \$7,785,986, or a total of \$19,180,325.

Of this the universities received \$1,621,760 and secondary schools \$3,393,364. In the support of education the provinces and communes share; but how much they pay it is impossible to state. In the administration the scientific and local element are seen to bear an interesting part. In the ministry there is a scientific council, which proposes courses of study and text-books, and provinces and communes bear a part both in expenses and the provision of plans. In the universities one supervising officer is appointed by the minister, but the programme of studies and the discipline are otherwise committed to the faculties. A gymnasium may have one council for general administration and another for pedagogical direction. The preparation of teachers has for a considerable period received increasing attention. Those graduating from normal schools, classes, or seminaries are authorized to teach without further examination. Those seeking to teach who have not had the advantage of any of these pedagogical courses may be certificated by the authorized commission on passing the examination required for the specified grade.

Men and women are both employed as teachers. Often the women outnumber the men. Salaries in rural districts range from \$277 down to \$92 per annum in addition to lodging and garden; in city schools, from \$482 to \$386 with a house. In secondary schools and normal schools the teacher might receive \$500, and the director or directress twice as much, with lodging. Teachers in rural districts are not always considered as holding such a relation to the Government as to entitle them to pensions, but those who are employed by the State receive a pension after twenty-five years of service. The subjects and methods of instruction in letters are much like those which prevail elsewhere, varying with the excellence of the teacher. The methods of Froebel are considerably favored in the infant or maternal schools.

Religion is emphasized, especially that of the Greek Church, in the Government schools and in those under the Holy Synod. The exhibits

gave most ample evidence of the great extent to which industrial and technical instruction is favored in elementary, secondary, and special schools. The schools under the several ministers other than the ministry of public instruction generally aim to train in the theory and practice of the operations carried on under it. These practice schools are, therefore, very numerous, and their representation at the Fair constituted a large share of the Russian educational exhibit. An eminent Russian educational writer says:

From the earliest period our Government has endeavored to improve general education and spread it among the people, but middle and low grade technical and industrial education (not taking into consideration the practical technological institute at St. Petersburg and the imperial technological school at Moscow, later merged into higher educational establishments) did not begin earlier than a quarter of a century ago.

Americans will remember the impulse given to technical and industrial education among us by the Russian exhibit at Philadelphia in 1876. President Runkle, of the Boston Polytechnic Institute, made special effort to call attention to its pedagogical excellence. In 1878 the ministry of finance was charged with devising a plan for these schools. In 1881 many of them were transferred to the minister of education; and in 1888 a special division was organized in this ministry for the direction of technical and industrial schools, and the minister was required to create a temporary commission on which there should be a representation of each ministry under which these schools had previously been conducted. The action of the commission was approved in June, 1889. Thus it will be seen that the plan went forward under favorable auspices in a way to eliminate the earlier mistakes and adopt the best results at each step. These establishments for technical and industrial education were divided into five groups. To the first group belong three schools—the technical school at Moscow, the high grade artisan school at Lodzi, and the technical school at Irkutsk. To the second group belong the technical school at Cherepoveth, the artisan school at Timbirk, and the Nicholas artisan school at St. Petersburg. Various railroad schools were also given the privilege of the third rank in military service, with the exception of the Nicholas artisan school at St. Petersburg, which enjoys high military privileges. The general instruction in these schools is much the same as in city schools, with the addition of physics, mechanics, the technology of wood and metals, and bookkeeping. Drawing is specially emphasized.

To the third group belong the artisan schools, instructing in subjects taught in elementary schools or village schools, of two classes. They aim at preparing master workmen in the various domestic industries of the village and in factories, such as cabinetmaking, blacksmithing, carpentry, carving, tailoring, shoemaking, bookbinding, and harness making.

To the fourth group belong schools for adults, such as the artisan school at Riga and those under the technical society of St. Petersburg.



Instruction is given evenings and Sundays, when workmen are not occupied.

To the fifth group belong the general educational low-grade establishments, including elementary, district, and city schools, with the extra artisan departments attached. To encourage local action the minister of education offers a subsidy where the local authority or individuals bear part of the expense. It is to be expected that there would be defects in the operations of so vast and varied a system. But this mere outline of it gives an idea of the vastness of its possible consequences. In 1890 a technical and professional congress was held to promote the efficiency of technical and industrial education. It is impossible to enumerate the exhibits which illustrate the progress of the adoption of these plans and have their place in these various groups. Of the 60 awards bestowed upon Russian educational exhibits 9 were received by institutions each of which was named women's college, and 8 of which were known as girls' institute. Outside of group 149 there were many exhibits illustrative of museums and the work of societies for the promotion of improvement in home industries. The technical museum for peasants' work at Moscow exhibited 22 articles; the children's education bazaar of the same city, 10 articles, all illustrating what is done in this home education in the making of those articles of common use. Foundling and orphan asylums exhibited many articles illustrative of training of the children in these numerous child-saving institutions. The ministry of public instruction exhibited (1) its reports; (2) programmes and plans of teachings; (3) samples of schoolbooks and appliances used in middle and high schools; (4) writings of professors of Russian universities; (5) work of pupils in different subjects and grades of instruction; (6) natural history collections illustrative of different subjects taught; (7) photographs of schools; (8) publications of scientific societies, high schools, and pedagogical societies.

The pedagogical museum, under the ministry of war, was undoubtedly the center of attraction among the various Russian educational exhibits. Those were especially fortunate who had the opportunity to examine this exhibition under the guidance of Prof. J. C. Heard, who had long had official connection with the museum, and held a rank in the Russian military service corresponding to that of colonel in the American Army. Many Americans will remember him as present at the Philadelphia Exhibition. Scholarly, and of high character, devoted to the service of the Czar, he was one of the most respected members of the board of judges in Department L. Among his duties at Chicago was that of purchasing those articles which he might find valuable in the way of promoting the improvement of educational methods, conditions, and appliances, therefore desirable in his museum. The date of the foundation of this museum has been given as 1863, but its formal opening is stated to have been the 9th of February, 1864. Its



first collections came mainly from Germany, England, France, and Italy. With it was connected a pedagogic library. Its first aim was the improvement of the methods and appliances of army schools, but it speedily influenced the manufacture of pedagogical aids in Russia, and its influence began to reach other schools. Indeed, when the museum originated, little school apparatus was made in Russia, and it took upon itself the manufacture of those articles which it exhibited.

It 1871 the museum was removed to better quarters. From time to time it has been reorganized and special additions made. At present its director has the aid of two committees: (1) The household committee, which consists of all the officers of the museum, and specially concerns itself with its administration; (2) the school educational committee, who by their experience and pedagogical knowledge may be specially helpful in promoting the objects of the museum. It is now treated as a section of the Practical Science Museum of St. Petersburg. It seeks to attain its object by (*a*) permanent and temporary exhibitions; (*b*) explanations of the scientific and practical significance of its collections; (*c*) scientific study in the museum, aided by its apparatus; (*d*) indication of means and methods for acquiring technical knowledge, publication of books, etc.; (*e*) communication with those needing its help. It has done much in organizing exhibitions at home and in sharing in exhibitions there and abroad, thus: (1) Acquainting schools with improvements; (2) bringing foreign apparatus to the attention of Russian manufacturers for their reproduction; (3) improving the quality and reducing the price of apparatus.

At Paris, in the geographical exhibition in 1875, it stimulated the establishment of similar museums in other countries. Its share in the hygienic exhibition in Brussels in 1876 led to the establishment of the pedagogical museum in Belgium. The same year it shared in the exhibitions at London and Philadelphia. It exhibited in Paris in 1878, and was greatly honored. In 1871 readings and lectures were commenced, illustrated with its apparatus. These have been specially successful. One is before the writer on the subject of salt, printed in English, with illustrative pictures conveying a great amount of valuable information in a most attractive way. There are at present 28 technical railway schools in Russia, of which all but 3 belong to the Government, and the others are under its inspection.

Russian subjects are admitted to these schools, but they are specially intended for the children, from 14 to 18, of those engaged in railway service. Their course of instruction embraces five years, three for study and two for practice on railways. During the three years of study in school there is taught: (*a*) Religion; (*b*) elementary mathematics, with the fundamental knowledge of bookkeeping and land surveying; (*c*) general knowledge of physics and practical knowledge of telegraphy; (*d*) a short course of general and applied mechanics (descriptive); (*e*) a short course in working wood and metal; (*f*) elementary knowledge of

architecture; (*g*) practice of railway business; (*h*) elementary and special drawing by hand and with the aid of instruments, as well as caligraphy, and (*i*) handicrafts, as locksmiths', blacksmiths', and joiners' work. Besides this there are introduced into the school singing and gymnastics.

Progress has been made in the education of the deaf and dumb. In sparsely settled regions ambulatory schools have been introduced with excellent results.

#### JAPAN.

Intelligent persons were prepared to expect an interesting and instructive exhibit of education from Japan, especially those who were either familiar with its recent progress or acquainted with the wisdom of its Government in using education as the initiative and directing means in that progress, or who had been observant of the skill of its officers in employing exhibitions as opportunities for bringing the great improvements made in the Empire to the attention of the other peoples of the world, and they were not disappointed.

Yet there was no special emphasis placed upon the educational exhibit by the Empire. The Japanese obtain important advantage from their care to use in speech, writing, and printing the language of the people with whom they do business. At Chicago, while using other modern languages, they were careful to use English; this greatly aided American study of their exhibits.

Unfortunately, the space assigned did not permit them to exhibit to the best advantage all the articles which they brought.

Their exhibition of education was strongest in kindergarten, industrial and technical training, and grades of instruction below the university.

The kindergarten exhibition was sufficiently complete to show that kindergarteners there strive to understand and practice the true principles of child culture.

The interest in the earliest training of the child was so great that soon after its efficient introduction there were not enough trained conductors to be found to answer the demand; consequently a private training school was established in Tokyo, and classes were formed for training conductors in the Tokyo Government normal school. It appears that there were, in 1890, 138 kindergartens, with 271 conductors, and 4,185 boys and 3,301 girls, or a total of 7,486 in attendance; of these 39 were founded by private beneficence and 99 by the Government. Their increase is encouraging. As in other lands, kindergartens are hardly known outside of the cities. In 1891 the attendance reached 12,484.

The specimens of child work exhibited were marked by the delicate construction characteristic of the people. The work presented from elementary schools was sufficient to illustrate in a good manner the methods adopted and progress attained. The character of the lan-



guage taught does not admit of the rapid progress in its acquisition common in learning English, German, French, Italian, or Spanish.

The introduction of modern text-books and methods, however, has reduced the time consumed, especially as compared with that occupied in China.

Before the restoration of the Imperial Government the elementary schools were chiefly those established by feudal lords, and admitted for instruction the children of the upper military class, and sometimes the children of the lower military class. The length of the course extended over six or seven years and included reading of Chinese characters, writing, arithmetic, etc. A small fee was charged.

After the restoration the new order of schools began in Kioto. The improvement was slight at first. The marked development began in 1871, when six schools were brought under formal regulations. In 1872 the education code established school districts and prescribed a course of study. The population of an elementary school district was estimated at 600. Ordinary elementary schools were divided into two grades, the upper and lower; the lower received children from 6 to 9 and the upper from 10 to 13 years of age—the whole course extending over eight years. The expense was borne by the district; tuition fees were charged. But as the people were unprepared for so great an expense at once—school buildings, books, apparatus, teachers' salaries, etc.—the Government granted aid from the public treasury, which amounted to 4,005,500 yen before the grant was discontinued in 1881. In 1879 school districts were abolished and schools were to be maintained by town or village corporations and managed by committees, and those trained in normal schools were to be employed as teachers; when this was inexpedient, there was provision for ambulatory schools—tuition fees were to be charged or remitted according to local conditions; local taxes were supplemented by Government grants. Thus the progress of the schools has been marked by various changes.

Schools in other countries have been much studied. Americans will remember the great interest taken in all that pertained to education by the Hon. Arinori Mori, that eminent and progressive statesman, the first Japanese minister resident at Washington. He spent much time in the Bureau of Education, sought the best educational experience in the country, published a book containing the opinions of eminent American educators, and drew in every possible way upon American experience for the benefit of his Government. Connected with the embassy extraordinary which visited Washington during his residence there were commissions of various kinds to study and report upon special departments of government, military, naval, financial, postal, educational, etc.

The chief of the commission in charge of educational inquiry was Hon. Fujimaro Tanaka, a scholarly and judicious statesman, and he had a number of associates and assistants, who for weeks commanded



all the time that could be spared by the Commissioner of the United States Bureau of Education, and on his recommendation visited and studied important examples of education in the United States and consulted with our most eminent educators. Mr. Tanaka was senior vice-minister of education 1874 to 1878, and also 1878 and 1879.

The interpreter for this commission was Joseph Hardy Nesima, in whom Americans became so deeply interested. He came to Boston as a lad in one of the vessels owned by Mr. Alpheus Hardy, and at his expense was educated at Amherst and Andover, and returning to Japan founded a Christian university.

The son of Mr. Hardy, a well-known author and the professor of mathematics in Dartmouth College, has written an exceedingly interesting and instructive life of Mr. Nesima, which is a valuable contribution to the history of education among the Japanese.

Mr. Tanaka has been in the foreign service of his country and has advanced from one position of honor to another, and is now one of the most trusted councilors of the Emperor.

Mr. Mori for a time was thought at home to be too progressive, but was again called to positions of public trust, and was minister of state for education from December 22, 1885, to 1889, when he died by the hands of an assassin. When the embassy extraordinary was in this country, Hon. David Murry, LL. D., of Albany, was employed to go to Japan as the foreign councilor of the department of education, and fulfilled his engagement to the great satisfaction of the people of Japan. It is not surprising, therefore, that in this exhibit of education we find much to remind us of our own schools and methods, while the organization and administration of the Japanese system of schools necessarily conforms to the imperial form of government, and therefore presents a complete contrast in this respect to forms of administering public instruction in America.

As stated by an eminent Japanese authority:

Notwithstanding the partial adverse influences exercised by the frequent changes effected in the educational laws, by faults in the manner of administration, and by the vicissitudes of political events, still it is an undeniable fact that during this short interval of twenty years education has, on the whole, been firmly established and steadily diffused from year to year.

The statistics for the first period of six years reached the following numbers: Schools, 22,298; teachers, 47,433; pupils, 1,886,573; while for 1891 they were, schools, 25,369; teachers, 69,586; pupils, 3,153,258. The imperial ordinance of 1890 classed the schools for apprentices and supplementary schools for technical instruction with elementary schools.

The subjects of instruction authorized in ordinary elementary schools are morals, reading, composition, writing, arithmetic, and gymnastics. According to local conditions, gymnastics may be omitted and either Japanese history or Japanese geography, or drawing, sewing, or handiwork may be added; sewing, of course, for girls.

It should be remembered that up to the time of the restoration of the Emperor to supreme power, female education in Japan was chiefly left to the home circle, and no provision was made for instruction of girls in public educational institutions. In 1872 the Tokyo female school was established; good progress was made, but the school was abolished and a special course was established for females in the Tokyo normal school. In 1882 a new higher school for females was organized in connection with the Tokyo normal school for females, and "a higher general course was taught with the view of educating refined and gentle women, the principles of morality being taken as the basis of instruction." The subjects of study were morals, reading, composition, writing, arithmetic, geography, the history of Japan, natural history, physics, chemistry, drawing, sewing, etiquette, household management, music, and gymnastics. The course of study extended over five years.

In 1879 female schools were organized in five ken. In 1882 the schools were much improved by the regulations of the department of education. According to statistical investigations made at the end of 1890, the number of public higher female schools was 7, and that of private schools 21, while the number of pupils was about 3,000. "Although female education would seem to have made tolerable progress, it is exposed to the continual vicissitudes of the times, and is not as firmly established as that of the males. Thus there is as yet no educational equality between the sexes."

In a report given out since the Exhibition for the year 1892 there is stated to be in one grade of schools 987,391 female pupils to 2,298,311 male pupils; 4,267 female teachers to 62,555 male teachers. The Empress specially promoted the advancement of woman's education by becoming the patroness of the Female Normal School.

Of the total population of 41,696,847, there are enumerated 7,356,262 of school age, 6 to 14, of whom 55.14 per cent are attending school.

The Japanese, early in the new order of things, recognized the training of teachers as the fountain of all education, and established a normal school in Tokyo in 1872. Ever since the national Government has emphasized the importance of training teachers in principles and methods. In 1874 four others were added. Now normal schools are not only sustained by the national Government, but by local authority—by the fu and ken. Their graduates are authorized teachers, and persons not graduates must be examined before they can teach. Recently teachers' institutes have been organized, and close inspection has been provided in order to insure good instruction and discipline in all schools. A marvelous work has been accomplished in twenty years. Much pains have been taken to introduce from other countries the recent pedagogical literature.

It should be noted that the Tokyo Educational Museum is under the care of the higher normal school. The Government, it will be remembered, early in its efforts for education, carefully collected from other



countries illustrations of school architecture, text-books, and appliances in order to hasten the acquaintance of teachers with the improvements sought to be made. Text-books were first published by the Government, and often distributed free to hasten their publication by private parties. These were frequently translations from approved text-books of other lands. The Japanese had the wisdom to lay the progress of all other nations under contribution for their own advancement. It will be remembered that Japanese young men were sent abroad to study in considerable numbers—in 1873 they numbered 373, of whom 250 were sent at the expense of the Government—and that many foreign teachers were employed in their schools.

In 1872 provision was made for schools above the elementary, known as middle schools, with a course extending over three years. This grade of instruction has continued through all vicissitudes. Regulations provide for the establishment and conduct of three schools in each fu and ken, and they have multiplied accordingly. In the course of study morals stand first, and then follow the subjects usual in such a grade, together with provision for instruction in special subjects, such as foreign languages, gymnastics, agriculture, etc. The first foreign language is usually English, the second German or French. At first these schools did not prepare for the university, but gradually the necessity of extending their course to meet that of the university has been recognized, and ere long it is anticipated that the step will be easy from the higher middle school to the university.

The Imperial University is now firmly established on most modern scientific principles. It naturally crowns the educational work of the Empire. Aspiring students gather here from all its borders. As early as 1871 the Government ordered the various feudal lords to select young and intelligent pupils in number proportionate to the extent of their territories to be sent as students to the university. In 1873 courses in law, science, engineering, polytechnics, and mining were established. Law, science, and engineering were taught in English; polytechnics in French; mining in German. Preparatory courses were also provided. The university has kept up with the progress of the Empire, or rather has led it, adapting itself with great wisdom to the new conditions and demands. According to the imperial ordinance it has for its objects the teaching of such arts and sciences as are required for the purposes of the State and the prosecution of original investigation in such arts and sciences. It consists of the university hall, established for the purpose of original investigation, and the colleges for instruction, both theoretical and practical, viz, (1) the college of law; (2) of medicine; (3) of engineering; (4) of literature; (5) of science; (6) of agriculture, which has only recently been added.

The history of the Imperial Agricultural College of Sapporo is exceedingly suggestive and illustrates the revolutionary progress of the Empire. The war of restoration over, the Government turned its attention to



more peaceful pursuits. The northern islands of Japan, vaguely called Yezo, a sort of terra incognita, attracted special consideration. Known as the abode of a barbarian folk, called the Ainu, they were regarded as a dreary waste of snow and ice, unfit for the habitation of a race of higher culture. Soon it was found that the land was endowed with magnificent natural resources, almost untouched by the human hand. The task of directing the Government's efforts in this behalf was committed to Gen. K. Kuroda, afterwards count and minister of communication. At the end of two months he made a report dwelling upon education as a most potent factor in effecting the changes contemplated. Three months later he emphasized the same idea, and prevailed upon the Government to send abroad some young men to be prepared for the pioneer labors required. Where should they be sent but to America, where new lands were being brought under cultivation? His appreciation of education rose higher than ever. He visited America and studied for himself. He was especially struck with the part woman performed in promoting American progress, and in his reports to the Government showed that the pioneering must not be confined to the improvement of rivers or mountains, or even to the increase of population, but that it must take cognizance of the important labor of fostering human talents, of training youthful minds—that the first great aim must be the providing of men and women, properly equipped, to become the leaders of the new order of affairs. He closed by recommending the sending abroad of some young girls, and several were sent to America. On his further suggestion a school was opened on the 21st of June in Tokyo, providing two courses, a general and special, to be taught by foreign specialists. Agriculture was to be included among the subjects of instruction. General Kuroda, when in America, with the authority given him, employed as the commissioner and adviser of the colonial office Gen. Horace Capron, then United States Commissioner of Agriculture. The result was that not only American plants, animals, and machines were introduced, but General Capron urged the education in agriculture, and especially the establishment of a college of agriculture. This was so in accord with General Kuroda's plan that General Capron's recommendation was adopted, and Col. William Smith Clark, then president of the college of agriculture at Amherst, Mass., was selected for the task. The result of the movement thus begun is seen in the agricultural industries in every part of the realm. The college at Sapporo has furnished trained men for the promotion of every public and private interest.

It is of interest to note that in 1891 there were in the university hall 43, and a grand total in all departments of 1,304 students. In the college of agriculture there were 228. There are two hospitals connected with the college of medicine. In astronomy a certain advantage is secured by tracing back operations connected with astronomical observations in the most ancient times. In 1888 a seismological observatory

was founded for the study of earthquake phenomena. Results of its work, of extreme interest, beautifully set forth, were exhibited at Chicago. Its several laboratories and opportunities for experimentation with plants and animals are extensive. The university library contains 180,000 volumes, exclusive of 13,963 volumes belonging to the college of agriculture. It may be remarked here that in former times public libraries were most rare; the Government had certain large collections for the benefit of scholars, and feudal lords had libraries of their own. Under the new order Tokyo has led the way in the establishment of a public library, which in 1891 reported on its shelves 294,344 volumes, and during the year visitors to the number of 60,000, who used daily on an average over 1,000 volumes. Some nineteen other libraries, public and private, have sprung up in other parts of the Empire. The Imperial Museum has large collections, especially in natural history, and carries on a system of exchanges with other countries that has been especially helpful to progress in many directions.

The Japanese early apprehended the relation of education to industry. The Tokyo technical school was established by the department of education in 1881 and designed to prepare persons as instructors in industrial schools and foremen or directors of manufactories. In 1890 its courses were enlarged; an electrical section was added, and weaving was introduced into the section of dyeing, and special training was provided for those intending to be teachers of manual training in normal schools. The school is manned by an able corps of well-trained teachers and is having great influence in promoting correct ideas in manual training in subordinate schools. The Tokyo music school was established in 1879, and Lowell Mason, of Boston, selected as instructor, and Japanese music was completely revolutionized, preserving what there was of special value in the old and introducing the best from other nations of the world. The unique art of Japan had reached a very high degree of excellence before the restoration, but began to lose its superiority under the influence of military commotions and of the high prices that inferior specimens commanded among foreign nations. Thoughtful minds apprehending the disadvantage of losing this superiority in art began in 1879 to organize instruction in painting and sculpture. This effort resulted in 1887 in the establishment of the Tokyo Fine Art School, with a general course of two years and a special course of three years, comprising painting, sculpture, architecture, and design. Its last report showed an attendance of 189. It is expected to do much in preparing teachers of drawing and of art. The specimens of work by its pupils exhibited at Chicago showed most encouraging results and were greatly commended by the best judges. On the 22d of May, 1875, five gentlemen, viz, Messrs. M. Furukawa, S. Tsuda, M. Nakamura, G. Kisheda, and Dr. Burchardt, missionary of the German and American Lutheran Church, held a consultation at Dr. Henry Fauld's house, Tokyo, on the subject of education for the blind, and



organized a philanthropic society, which led to the foundation of a school for the blind and the dumb. The next year Mr. Y. Yamao, the senior vice-minister of public works, joined the society and objected to its dependence upon a foreign church for its support, and in accordance with his urgency those interested, whether native or foreign, regardless of religious differences, joined in the effort. The Emperor contributed 3,000 yen. The difficulties of overcoming the prejudices against educating these unfortunates were very great. At last two blind children and one dumb pupil were secured. An alphabet for the blind was devised, based on Braille's system. In 1888 his excellency Arinori Mora, minister of state for education, visited the institution and gave it most emphatic public approval. The minister conferred the certificates, and in his remarks called to mind the neglect of the blind and the dumb in the past, and said to them:

You must not be content with your present condition, but endeavor to advance your knowledge and skill with a view to the increase of your happiness; your prosperity will not concern yourselves alone, but will not a little incite even those whose senses are complete to study and work. Thus your endeavors will be productive of good results in the education of the whole community.

In 1892 there was an attendance of 92.

The total expenditure for education for the year 1890, under the department of education, reached the sum of 1,284,960,471 yen. In all courses of instruction special emphasis is placed upon moral training. The regulations for elementary education significantly declare that "the culture of the moral sensibilities should be chiefly attended to in the education of children." It is added, "Hence in teaching any subject of study special attention should be paid to those topics that are connected with moral education and with education especially adapted to make of the children good members of the community."

The board of judges conferred upon the Japanese exhibit of education some thirty awards.

There is in Japan an organization of learned men for the advancement of their national civilization known as the "Academy." It was organized in 1879 and allowed to have 40 members. Now 15 are nominated by the Emperor and 25 by the members, subject to the approval of the minister of education.

There is also an educational society, dating back to 1870, with members numbering over 2,000, scattered over the Empire, ready to promote the progress of education.

In addition to schools and educational activities under the direction of the department of education there are also important schools for instruction under other departments. Under the imperial household department there is the school for the sons of nobles, on which there is an attendance of 660 pupils. There is also under the same department a school for the girls of the nobility, with an attendance of 364. Under the war department there are five schools for the instruction of officers



and soldiers. In the naval department there are five schools also for the benefit of those in the naval service. The department of communications has a nautical school and a school for instruction in telegraphy and postal service.

The Japanese woman's commission, under the patronage of the Empress, with Princess Mori as chairman, were active in promoting a knowledge of the education of women: (1) Woman's position in society; (2) in administration; (3) in literature; (4) in religion; (5) in the home, (a) child, (b) wife, (c) mother; (6) in industrial occupations, (a) agriculture and sericulture, (b) handicrafts, (c) mercantile business; (7) in refined accomplishments, fine arts, music, painting, floral arrangements, incense and tea ceremonies; (8) woman's work in the present period, or since 1868, charitable and female philanthropic work, etc.

The university founded by Joseph Neesima has in connection with it a very prosperous school for nurses.

#### TURKEY.

Text-books from Turkey were brought to the attention of the board of judges of the liberal arts and were awarded recognition. They showed an attempt to adopt modern principles of education and modern methods of teaching. Turkey has a minister of public instruction. In 1869 a school law was decreed containing the following provisions: (1) Each ward or village must have at least one primary school; in towns containing more than 500 houses, primary schools of a higher grade shall be established; (2) each town containing more than 1,000 houses must have a preparatory school or college, and the capital of each province must have a lyceum; (3) at Constantinople there shall be an imperial university and great council of education. "But these excellent legal provisions," says an eminent authority, "have never been carried out, and neither new primary schools nor colleges nor lyceums have been established." There was both a lack of funds and competent teachers. The difficulties in the way of educational progress are great; (1) the difference of race, (2) of creed, (3) of language, (4) the condition of woman, (5) the unnamed tradition which obstructs progress. The people are faced backward. The schools that exist to a certain extent are known as ward or district schools, where the teacher instructs in the Turkish alphabet and reads the Koran in Arabic with his pupils, who are supposed to remain with him five or six years and pay a small fee. When pupils advance beyond this instruction they enter a higher grade, where they still pursue Turkish and take up the rudiments of arithmetic and the history of their country. This course lasts five or six years. Of a higher grade are the mosque schools, in which Turkish is continued, and Arabic, philosophy, theology, and history are studied. Little or no attention is given to the natural sciences. The character of scientific information, when imparted at all, may be judged by the report of an eminent American, that "in connection

with the application of electricity to telegraphy nothing was known of either Franklin or Morse." It will be remembered that the Koran is the source both of civil and religious laws. The Koran, therefore, and its commentaries are the chief subjects of study, and much time is devoted to committing them to memory.

There are certain special schools under the direction of the Government, such as the military academy, the naval academy, the artillery school, and the school of medicine. The Turkish language is so destitute of scientific terms that the French language is largely used in these schools. Latin scientific terms are also much employed. The Catholics established schools in Constantinople three centuries ago and they now maintain schools in many parts of the Empire. The Protestants have more recently established schools of great efficiency for both sexes.

#### EGYPT.

The schools of Egypt were represented by a single exhibitor, James Blackmore, of Cairo. The exhibit attracted marked interest. The material consisted mainly of text-books, the manuscript work of pupils in their native language, and in arithmetic and geography, together with specimens of manual training. Of course, with Mohammedans, the Koran takes the place of the Bible. Education encounters unnumbered obstacles. Egypt has in Cairo a university as old as the city. In 1302 the building was greatly injured by an earthquake, but within the next two centuries was restored and enlarged. To describe its size it has been said that "on the 21st of October, 1798, when an insurrection broke out against the French, 15,000 insurgents took refuge within its walls and did not surrender until Napoleon brought artillery to bear upon them." The object of the instruction is to make lawyers and theologians. There are four divisions or grades of study, the first two comprising grammar and syntax; the third, the doctrine of God and His attributes; the fourth, law, and consists in committing to memory commentaries of the Koran and the principles of jurisprudence. Besides these four essential studies there may be pursued rhetoric, prosody, logic, arithmetic, and mathematics. Recent Khedives have sought to establish effective systems of public instruction, seeking to introduce something from European and American improvements. A school of medicine, dating from 1827, which has had at times among its professors eminent European physicians, has done excellent service. There is connected with it a large hospital, a botanic garden, a library and a museum of anatomy and natural history, a school of pharmacy, and a chemical laboratory, in which medicines are prepared for the provinces. It has also a school for nurses, which gives to its students not only the special instruction required, but a more general education than is usually found among women of the East.

In 1868 the school law was thoroughly revised. Since then at different times education has received more efficient attention, and the Government with reasonable exertion could have made a much more extensive and instructive exhibition at Chicago of public education. Rev. Horace Eaton, D. D., writing of his visit to Egypt, states that—

The minister of education of Egypt seems to be sparing no pains to improve and extend education among the people. The higher departments in Cairo are directly under his inspection. His excellency, in person, favored the consul and myself with a visit to five departments. While they all study Arabic, mathematics, and philosophy, one class was reciting in German, another in French, and another in English. The sentences presented to us by the students in English were accurate and well written. Another class of young men was studying the laws of the country. The building used was convenient and inviting, surrounded with fountains and gardens. The departments visited were supported by the Khedive with the purpose of fitting students of the greatest promise to serve as engineers.

The Copts maintain schools of their own, of different grades, in which the Bible is used instead of the Koran. They have schools for girls as well as for boys. The Jews also maintain a number of schools of their own. Efficient schools have been established by different churches, including the Greek, Roman Catholic, and Protestant. The Americans have schools at Cairo, Alexandria, Kous, and Mansurah, and two other points in the country.

#### LIBERIA.

The exhibition of education from this State was more significant in its absence than the collection it presented. In the main, the collections from the country either illustrated the conditions and characteristics of the natives or the industries and commerce of the negroes who had emigrated from America and the government they had established. There was much that was instructive in regard to the possibilities of the country, the richness of the soil, and the variety of tropical plants useful to man. Everything points to the needs and character for development. Education should be the first consideration of every interest.

Liberia, it will be remembered, is the only Christian negro State in Africa, and is situated on the grain and ivory coasts of Upper Guinea, between the parallels of 4° and 7° north latitude, extending along the Atlantic coast some 500 miles. The chief directory agency has been the American Colonization Society, with headquarters in Washington, D. C., which sought to provide for the negro a home, in a country where he could enjoy the privilege of full citizenship. The movement commenced in 1822. In 1847 the national independence of its people, as a sovereign State, was acknowledged by leading nations. The Government is modeled after that of the United States. It provides for a system of public schools, crowned with a college or university. But education, unfortunately, has languished, as have some other elementary interests in the foundation of a stable, prosperous, and free gov-



ernment. Good roads have not been provided. The means of adaptation to the climate and other conditions of the country have not been sufficiently studied to assure comfort, health, prosperous industry, and the development of higher personal, social, and civil life. Many who have come to the country were not able or sufficiently intelligent to maintain a higher order of life from the homes from which they came, surrounded by the conditions of civilization.

In spite of these adverse facts, not a few have come to the front as worthy leaders, and what has been accomplished in it has much of promise. The American Colonization Society in its activities, under its secretary, Hon. J. Ormond Wilson, who became widely known as the wise and successful upbuilder and superintendent of the system of free schools in the District of Columbia, has changed its policy. It now seeks to aid Liberia in cooperating along lines having in them the greatest possibility of improvement. It sends out few emigrants, and only those prepared to be good citizens and contribute to the highest welfare of their adopted country, persons of intelligence and means, skillful in the common industries, or physicians and teachers. The society is seeking especially to cooperate with the Government in revising the school system, in securing appropriate sites and houses, good and uniform text-books at reasonable rates, and efficient and faithful teachers. The bulletin published by the society is full of valuable information, both for Liberia and the formation of correct opinions by its friends.

#### THE DOMINION OF CANADA.

The colonies in forming the Dominion of Canada retained their own educational autonomy. The Dominion Government attempts no authority over them in matters of education. A single fact is the source of great embarrassment in the Province of Quebec. The scheme of education, instead of being managed by civil administration irrespective of denominational creeds, is divided between Roman Catholics and Protestants. Each has, for instance, a separate public-school system of its own. The school tax levied on the property of Catholics is expended in the support of schools managed by a Catholic board of education, taught by Catholic teachers, and attended by Catholic pupils. The same is true of Protestants. Another embarrassment arises from the use of two languages, French and English.

The education of Ontario has attracted more attention than that of any other Province. The conspicuous figure and hero of its early struggles, as well as of its later triumphs, was Rev. Edgerton Ryerson, LL. D., so long the chief educational officer of the Province. Elementary schools were put on a comprehensive basis in 1844. The chief educational officer has been known as minister of education since 1876. The present minister is Hon. George W. Ross, LL. D. Dr. Ryerson's deputy and life-long friend and coadjutor was Hon. John George Hod-

gins, M. A., LL. D., barrister at law, greatly honored in Canada and the United States, who still survives and occupies in the department the post of librarian and historiographer. Dr. Ryerson acted on the theory that nothing was too good for Ontario schools; that they deserved the best to be found anywhere. As a result, it may be said, in the language of the deputy minister, that—

From the State of New York Ontario borrowed the machinery of their schools; from Massachusetts the system of local taxation; from Ireland their first series of text-books; from Scotland the cooperation of the parents with the teacher, in upholding his authority; from Germany the system of normal schools and the kindergarten; and from the United States generally the undenominational character of elementary, secondary, and university education.

General and local authority work in harmony; the several grades are clearly defined, especially the relations of the high schools to the university; teachers are professionally trained; no person can be an inspector or superintendent who has not had experience as a teacher, and does not hold a high-grade certificate; inspectors removable if inefficient, but subject to removal by popular vote; the examinations of teachers under provincial instead of local control; the acceptance of a common matriculation examination for admittance to the universities and to the learned professions; a uniform series of text-books for the whole Province.

The kindergarten is now a part of the public system. There is no established church in Ontario or connection between church and state. No religious body has any voice in the management of the high and public schools or the university. These institutions are far from being Godless or irreligious. Though not denominational, they are institutions of a Christian people. The doctrines of no church are taught, but the principles of Christianity form an essential feature of the daily exercises. The teachers are, with very rare exceptions, men and women of high moral character. Regulations of the education department provide that—

(1) Every school should be opened with the Lord's Prayer and closed with the reading of the Scriptures and the Lord's Prayer or the prayer authorized by the department; (2) the Scriptures shall be read daily and systematically and without comment; (3) trustees may order the reading of the Bible or the authorized selections by both teachers and pupils at the opening and the closing of the school, and the repeating of the Ten Commandments at least once a week; (4) no pupil shall be required to take part in any religious exercise objected to by his parents or guardian; (5) absence during the religious exercises is not treated as an offense.

It is assumed that the parent as well as the State has duties to perform regarding education. It is held to be the duty of the State to provide free elementary schools, and that compulsory education is a necessary corollary of free education. If the State gives the boon of free education to all it has a right to see that the expected advantages are realized. Attendance is enforced between the ages of 8 and 14; the rights of conscience are guarded. Penalties are not inflicted if the child is under efficient private instruction or unable to attend through sickness or other unavoidable cause. A penalty of \$20 is imposed upon any person employing a child under 14 years of age during school hours; but if the services of a child are urgent he may be excused six



weeks of a term. Vicious or immoral children are sent to an industrial school. Truant officers must be appointed in every city and village and may be for every school section. Truant officers must report annually to the department of education. The friends of the public schools endeavor to preserve them free from partisan influences. Already 66 kindergartens, with an attendance of 6,375 pupils, are reported. The population of Ontario is reported as 2,114,321, and the school population as 615,781, and the pupils enrolled 491,741. Certain educational privileges were guaranteed Roman Catholics by the act of confederation, and they may establish what are known as separate schools. This may be done also by the Protestants and for colored persons. Two hundred and eighty-nine separate schools are reported in the Province. Two public normal schools are maintained, one in Toronto and the other in Ottawa, each having a model or practice school associated with it. There is also a so-called school of pedagogy in Toronto. For thirty years the teachers' institutes have been noted for their efficiency. Thorough school inspection is an important factor in educational progress. The education department, in addition to the general care of education, is authorized to manage and inspect mechanics' institutes, libraries, reading rooms, evening classes, and art schools. There are reported to be in these libraries 426,966 volumes.

#### MEXICO.

Our opinions of Mexico, our near neighbor, suffer from inadequate or inaccurate information. The Mexican exhibit at Chicago furnished a rare opportunity for obtaining full and accurate data upon the most important topics concerning that very interesting country. A large amount of literature was distributed, private and official. The fact that most of it was in the Spanish language was a bar to its use to those who knew only English. Many of the books were gotten up, printed, illustrated, and bound in the highest style of the printer's art. There were treatises embodying the most thorough scientific investigations into the geography, geology, mineralogy, and other features of the natural history of the country. There were many evidences that the General Government and that of some of the States are laying under contribution the most advanced scientific research and experiments to promote the advancement of the interests of the people. The ancient history of the country has long been the subject of speculation. It is authoritatively stated that it had at the time of the conquest over 30,000,000 of people and that within a period of thirty-six years from that date 3,500,000 of the native inhabitants died, and that this depopulation went on at such a rate that by the year 1793 the population of New Spain, so called, "scarcely amounted to 3,865,499." The total population by the last census is given as 11,834,822. The censuses are believed not to be free from imperfections. From official data it appears that from the years 1852 to 1862 the population increased at



the rate of 9.58 per cent; from 1862 to 1872, 8.34 per cent; from 1872 to 1882, 9.94 per cent; from 1882 to 1892, 18.29 per cent. The Federal District, or capital, has 329,535 inhabitants. A geographical subdivision of population is made as follows: The Pacific States, 4,023,376; the Gulf States, 1,322,649; the Middle States, including the Federal District, 5,564,845; the States of the North, 923,952. Under the head of "races" an official authority remarks:

The present predominating race in Mexico is not the Indian, as in the times previous to the conquest, nor the Spanish race, as in the time of government by viceroys, nor even the creole, as in the first years of independence, but a people springing from the commingling of the blood of the Spanish and American. The European and Indian have amalgamated to such an extent that comparatively few of the distinct races excel in Mexico. Very few Europeans become naturalized citizens of the country, and as for the Indians, they live in nearly absolute independence, as is the case with those who inhabit the mountains of Chiapas and Oaxaca; the one in a semibarbaric, the other in a secluded manner, either in a lamentable and fallen state, as in the central table-lands, or next to the barbaric, as in Sonora and Chihuahua. The Indians, by virtue of their endowments received, are preeminent in aptitude for any kind of accomplishment, and will not separate themselves from their tribal customs to join in the general movement of progress and civilization and the uniting of their race with the more intelligent one. The Spanish-American, which forms an energetic race, improved by amalgamation, has preserved much of the Indian tenacity, endurance in adversity, and their war spirit and inclination to strife; while from the Spaniards he has derived his mental qualifications, and a restless, chivalrous spirit, with not a little of his lack of practical common sense. The mixed race are the managers of the industries, directors of the finances, and form the chief portion of the tax paying class of Mexico. The Indian, stupefied and discouraged by the oppression of the Spaniard, and degenerated by superstition, still finds himself unable to shake off the inertia, which has had its consuming effect, not for the want of intellectual capacities, but because the race is weighted down with two great elements of degeneration, viz, oppression and fanaticism, which prevent it from rising above its degraded condition.

The horde of semibarbarians of Yucatan are obedient to only two motives—hate and detestation for the white race and love of the priests. Notwithstanding this, it would be ridiculous at the present day to enter into a discussion as to the capacity of the Indians to "conceive abstract ideas," as in the time of Robertson, or to discuss their "strength and resistance," as in that of Dr. Benito Maria Moxo, which were hardly conceded. But such subjects are not worthy to occupy too much attention from intelligent persons. There is scarcely in existence one solitary individual possessor of rudimentary ethnical knowledge who would dare to doubt the moral gifts of the Indian or his physical resistance. The Indian, as a soldier, is sufficiently known to European nations, and in order to form an idea of his moral gifts it is sufficient to read the story of Juarez, Ramirez, Altamirano, and many others whose names have been, and will continue to be, handed down on the brightest page of history.

Until now we have considered the Indian by comparison in the light of two extremes, from the highest grade of intelligence to that of the barbaric; we have also spoken of the degenerate Indian; and we will now consider him as one joined to civilization, that is to say, regenerated or become amalgamated with the predominant race. The Indian, in order to attain the civilization of his more fortunate neighbor, has two roads before him—the army and the workshop. The army is a school and ladder for the Indian; the school where he can obtain a rudimentary education to place him on the road to securing higher positions among the Spanish-

American element; therefore incidentally it may be stated that so long as there exists so large a number of Indians in Mexico the reduction of the army, of which so much has been said, would be a censurable measure.

Besides the army the Indian has another road to civilization—industry. In the factories and workshops he is placed in contact with the active and intelligent elements, and will ere long receive the benefits of the stimulus; he commences in his new position by abandoning his dress, which is only so in name, and adopting that of the Spanish-American, finally acquiring intelligence and development of his moral faculties.

The Spanish-American, to which race belongs the greater portion of the public functionaries and literary men of Mexico, has succeeded, after the most energetic efforts and with the material aid of the native Indian element, in reconstructing the national character, binding together all its parts, fusing its dissoivent elements in a common mass, and inspiring in all classes, with the love of country, the spirit of true progress.

Of the 11,395,712 inhabitants an official authority designates 2,165,185, or 19 per cent, as European and Spanish-American; 4,330,371, or 38 per cent, as Indian; and 4,900,156, or 43 per cent, as "mixed." The laws are favorable to immigration, but the frequently disturbed condition of the country has not attracted foreigners. Foreign capital, however, has made large investments in mines, railroads, and other internal improvements, greatly to the advantage of the country.

In 1874 complete separation of church and state was declared. The ministers of any religion do not by reason of their character or profession enjoy any privilege that would distinguish them from any other citizens, nor are they subject to greater prohibitions than those designed in the constitution. Morality is taught in national establishments without alluding to any special religion. No religious ceremony is permitted to be performed in public, but only in the interior of the churches, and these must be public. Members of any religious denomination are forbidden to wear any dress to distinguish them from other citizens. As a result of the bloody conflicts through which the country has come, the Government seized the property of monastic orders and will not now allow their establishment, whatever may be their purpose. It has been declared that the most obstinate resistance to the necessary enlightenment of the people arises from superstitious beliefs which they have accepted as religious. In the main, the officers of the Government are adherents to the Roman Catholic Church. The first so-called Protestant church dates its organization back to 1869. These churches are now reported to have 16,250 communicants and probably 49,512 adherents. They report 7 theological schools, with 88 students; 23 boarding schools and orphanages, with 715 pupils; 164 common schools, with 6,533 pupils. Sunday schools are said to have an attendance of over 10,000. There are 5 publishing houses, from which are issued 11 papers. All these efforts are in hearty sympathy with the efforts of the General Government and of the several States to establish efficient systems of public instruction.



The first law in regard to public education appeared the 30th of October, 1833; further action was taken in 1834, 1843, 1846, 1854, and 1855. In 1861 a law was passed upon public instruction under the department of justice. On the reestablishment in 1869 in the city of Mexico of the constitutional Government, education, which had reached a most deplorable condition, began to receive new and more vigorous attention. New opportunities were opened for women, and primary instruction was made obligatory in the Federal District and territories. Still more definite and effective legislation was had in 1888. In the following year the minister of justice organized a congress of education, to be composed of eminent educators, including representatives from the different States appointed by their respective governors. This congress was found so effective in harmonizing views, administration, and legislation, and in awakening interest in the public mind in the establishment of schools and the instruction of youth, that other congresses have followed, each doing, if possible, more effective work than its predecessor. It is impossible to describe the difficulties encountered. The most rudimentary steps were necessary. In general it was agreed that every means should be adopted to establish schools and improve instruction, alike for girls and boys. The scholastic year was to consist of ten months, beginning on the 7th of January; the scholastic week of five days beginning Monday and closing Friday.

The instruction was to include the practical duties of the man, the woman, and the citizen; reading and writing the national language; arithmetic; the rudiments of the natural sciences, of geography, and of national history; practical notions of geometry; drawing; sketching of common and simple objects; singing; gymnastics and military exercises; manual training adapted to boys and to girls. Local committees are organized in different sections to see that the law is carried out by parents, teachers, and children. To stimulate teachers prizes are offered for specially meritorious efforts. Meantime the General Government, in meeting the great demands upon scientific knowledge in the discharge of its duties to the people in the military, naval, and civil service, has organized schools of medicine; of engineering in all its departments; of agriculture and veterinary surgery; of commerce and administration; of arts and trades for men and for women; of fine arts, including painting, sculpture, and engraving, and a conservatory of music. A school for deaf-mutes was established in the City of Mexico in 1866 and one for the blind in 1870. A school of jurisprudence or law was opened in 1868, with a six years' course. In 1885 a normal school for the training of teachers for the elementary schools was established under the immediate charge of the department of justice and public instruction. A four years' course was provided and experience in practice schools was required. Here a knowledge of kindergarten principles and methods may be obtained. The model school for preceptors, established in 1887, receives from the Government an annual



allowance of over \$60,000, and has already become well known for its efficiency; prizes are offered to stimulate the preparation for teaching. In the libraries at the capital, which are supported by the Federal Government, there are reported 220,538 volumes, of which 159,000 are in the national library. Twenty literary and scientific societies are reported in the Federal District. Attention was given to the establishment of museums as early as 1786, but interest so languished that little remains of them. The national museum, however, has been reorganized on an efficient basis, and now receives \$12,000 annually for its support. In archaeology Mexico has done much to attract the admiration of scholars in all countries. There are reported 390 periodic publications in the entire Republic. For 1892, \$206,000 were expended for public instruction in the City of Mexico and 21,159 pupils were enrolled. Statistics of public instruction are lacking from four of the States, but in those reporting there were in 1890 enrolled 221,952 males and 104,945 females, or a total of 326,897.

Some twenty awards were bestowed on group 149. A considerable number were given to schools that exhibited photographs of their buildings, grounds, and appliances, and the work of their pupils, and were distributed among different States, as well as in the Federal District. Some were given on reports and statistics; others on school furniture; most were bestowed for the excellence of school work. Specimens of drawing in crayon and with pencil and specimens of penmanship attracted especial attention.

#### BRAZIL.

Brazil erected an imposing representative building, and occupied in different departments important space with industrial and commercial exhibits, but the representation of education was inadequate both in educational, literary, and illustrative articles. Indeed, comparatively few visitors were able, from information obtainable on the grounds, to form any definite idea of what is accomplished in that country for the advancement of the intelligence of its people. A national museum of natural history was established in Rio as early as 1817. Others of like character are found in Pará, Ceara, Oupreto. The national library in Rio numbers over 100,000 volumes. The college at Rio numbers 22 professors. Considerable attention is paid to military education. The Central College has 11 professors, devoted to higher branches of military science and engineering. There is also an astronomical observatory associated with it. There are two faculties of medicine, one at Rio and another at Bahia. There are faculties of law at Sao, Paulo, and Recife. There is a commercial institute at Rio. There is also an institution for the blind and deaf and dumb. Rio has also an academy of fine arts and a conservatory of music. Each of the several States carries on a system of public education, including elementary and secondary schools. There are many private schools, especially small ones,

of great merit. The Province or State of Ceara, where the inhabitants in 1890 numbered 757,662, numbered according to the latest reports in its schools for primary and secondary instruction 4,443 boys and 4,546 girls. Ceara maintains a normal school.

#### URUGUAY.

The Republic of Uruguay made an exhibit of education in the agricultural building. There were collected text-books used in different grades of instruction, specimens of school furniture, seats and desks, and illustrations of the apparatus used, and the pupils' work. The exhibition was not large, but showed with what intelligence and zeal the people are striving to meet the difficulties in the way of universal education. Among the important agencies employed for the dissemination of correct ideas is a pedagogical museum. In this an effort is made to show the importance in appliances used in other countries. Already education has been declared free and attendance compulsory. The children of school age are reported as 5.4 per cent of the total population, or about 30,000. Public schools are by law unsectarian. The best methods of organization and instruction are slowly making their way among the people. Advanced education is very limited. A university was founded at Montevideo in 1838. Much good has been accomplished by it, but the instruction has not reached the high grade found in the universities of Europe or in the United States. As high a number as 1,300 students have been reported in attendance. There is also a well-known school of arts and trades.

#### ARGENTINE REPUBLIC.

The visit to this country of Sarmiento, the enlightened and distinguished Argentine statesman, created an interest in the education of his country which has by no means disappeared from the American mind. He apprehended the importance of the careful training of the young to the establishment and perpetuity of free institutions. No South American statesman ever did more for the training of the youth of his country. There was not a little disappointment that the present condition of Argentine education was not fully represented at Chicago. The period of the Government neglect of public education in that country is a striking illustration of the opportunity furnished by the ignorance of the people for the reign of tyranny and terror. Whatever stability and prosperity have come to that country may be traced to the efforts to train children in virtue, intelligence, and industry. The most satisfactory information obtainable at Chicago in regard to Argentine education was that furnished in reference to secondary instruction in national colleges and normal schools. The course in the national colleges embraces five years. For the first year Spanish, practical arithmetic, geography, history, French. The second year Spanish, arithmetic, Latin, history (ancient), geography, French. Third year Spanish,



Latin, history (Europe, middle ages), geography (Europe, physical and political), algebra, fundamental rules, plane geometry (first six books of Euclid), French (reviewing of grammar and reading), English (grammar and composition). Fourth year Spanish, elements of rhetoric and forms of literary productions, notions of etymology (formation of the Neo-Latin languages), Latin (Livy, Sallust, and Cicero), history (America at the time of discovery and the wars of independence), solid geometry, physics, mechanical forces, natural history (zoology), philosophy (psychology), English, reading and composition. Fifth year, Spanish (historical view of the language, literary movement in Spanish-American countries), Latin (Cicero and Horace), civil government (Argentine constitution compared with that of the United States), physics (light, electricity, acoustics), cosmography (historic), history (French revolution, Germany, unification of Italy, intellectual movement), Argentine history (colonial), viceroyalty, the Republic, era of anarchy, tyranny of Rosas, organization of the Republic, chemistry (inorganic and organic), natural history (vegetable anatomy and physiology), geology (constitution of our globe), mineralogy, grouping of mineral substances, philosophy (logic), ethics (duties and rights), English (study of special authors). It is complained that since 1863 the plan of study has suffered eight modifications, and that now Latin is compulsory from the second to the fifth year. As in other national establishments of education, no system of religion is taught, but an important place is assigned to instruction in morality. Candidates for admission must have completed their twelfth year. Sixteen national colleges are reported with 2,604 pupils in attendance, costing annually \$685,980. In addition to the national colleges, private colleges may be incorporated by complying with certain specified conditions. There are 17 of these colleges reported with an attendance varying from 28 to 500. The plan of a national college includes a library. The number of volumes in these libraries has reached 36,788. Much pains is taken to furnish the colleges with maps and charts, laboratories, and museums. They are all under the supervision of the inspector-general, who has two assistants, and reports to the minister of public instruction. Great interest is manifested in the introduction of manual training into the course of instruction of these institutions.

#### NORMAL SCHOOLS.

Sarmiento in 1868, when he returned from North America to occupy the Presidency of the Republic, established the normal school at Parama. Mr. George Stearns, a New England teacher, became its principal. There are now 13 normal schools for males with an attendance of 3,130, and 14 normal schools for females with an attendance of 3,837, and there are 7 mixed normal schools with an attendance of 250 in the normal courses. Normal schools are of two classes, those of the lower grade with a three years' course, and those of the higher with a



five years' course. In the male normal schools there is military drill; in the girls' normal school there are courses in sewing and domestic economy. There were in 1892 6 kindergartens attached to as many normal schools. The first was opened at Parama in 1883, under Mrs. Eccleston, from the United States. In 1890 a national school of commerce was established, whose graduates are given preference in the public service.

#### HAITI.

There was peculiar interest attached to the presence of Haiti in the World's Columbian Exposition at the four hundredth anniversary of the discovery of the American continent by Columbus. The Government erected on the grounds a pavilion of merit as a general rendezvous for its visiting citizens, and occupied space with interesting exhibits in the departments of agriculture, mines and mining, forestry, and others.

Inquiries for education were only answered by a very brief and inadequate statement, made by the secretary of state, for public instruction, which contained a general description of the condition of affairs in the Republic of Haiti in the year 1892. The data contained in this report showed a condition of things far from encouraging to the friends of education. Educational expenditures were inadequate, schools were not sufficient in number, teachers were not well qualified, attendance was limited and irregular.

Those among the leaders of the people who are seeking to promote the best things in education are at great disadvantage. The people generally must become more deeply interested in intelligence and virtue before their Republic can expect that prevalence of law, order, and prosperity which gives stability to government.

It was a fact of great promise that the Hon. Frederick Douglass, late United States minister to Haiti, was selected by that Government as its representative to the exposition. He was the most conspicuous representative of what the colored man may attain. When he spoke, he voiced not only the possibilities of Haiti, but of the colored race.

#### NEW SOUTH WALES.

The educational exhibit of New South Wales deserves special attention. The literature was abundant. One could learn all about that distant country, its geology, mineralogy, geography, and meteorology; all about its government, its people, and their pursuits, and the provision for culture during school period and afterwards. Nothing appeared to be overlooked or left out. Here were school laws, school reports, general and special, such as that on technical education, and that on lighting, heating, and ventilating of school buildings. The last was made to the legislative assembly, and contained a survey of these subjects in Great Britain, on the Continent of Europe, and in America,

thus making clear that the educational experience of the world is laid under contribution for the benefit of education in the colony. The public system of instruction is administered under a central office, which was set forth in detail. The colony is appropriately subdivided, and the schools are carefully graded from the university downward to the kindergarten. These grades were carefully set forth by systems of classification, views of grounds, buildings, and the specimens it has, and appliances connected with each grade, and the school work of the same, both from country and city, all carefully catalogued. There were 4 views of the technical college and 12 of common public school buildings and specimens of pupils' work from 574 public schools.

The first class for technical education in the colony was held at the Sydney Mechanics' School of Arts, 1865. There is now a technical college located at Ultimo, with a large number of branch schools in other considerable centers of population, and the whole is under the ministry, supervised by a superintendent of technical education, and the number of individual students enrolled in 1892 was 8,329.

Specimens of their work were exhibited in architecture, carpentry, cabinetmaking, sanitary plumbing, masonry, stone and marble carving, in masonry drawing, mechanical drawing, pattern making, iron founding, boiler making, fitting and turning, and coach building, in modeling, photolithography, industrial art, calligraphy, and phonography. The Technological Museum contains 9,000 specimens, and a large number of these were on exhibition, carefully catalogued, with illustrations of economical application, including foods, medicines, and specifying resins, gums, barks, fibers, and galls. There were great numbers of specimens of wool, both for educational and commercial purposes. The work done for the deaf and blind was illustrated by photographs of the blind, by statistical reports, and specimens of the work done by the pupils. There were 7 photographs of the University of Sydney, which received the royal assent the 1st of October, and declares its object to be the advancement of religion and morality and the promotion of useful knowledge. It has buildings on a site allotted by the government which cost \$1,000,000, and includes scientific laboratories and museums equipped with all modern appliances. In 1892 it had 14 professors and 40 lecturers and demonstrators and 598 students in attendance, including 99 women. There are 4 affiliated colleges. There was a large number of specimens exhibited from the collections in the museum of the university. The free public library contained 97,349 volumes, and its visitors are carefully reported, as are those to the museum and the national gallery of art. The total enrollment of pupils in 1892 was 240,641.

Kindergarten is now taught in all the training classes. Cookery and needle instruction for girls and manual training for boys are increasingly demanded. The legal school age is 4 to 14. An arbor day is extensively observed.



A considerable number of evening schools are maintained. There are reported so-called house-to-house schools. These are composed of the children of families residing in localities several miles apart. Each locality forms a teaching station or house-to-house school, and the teacher journeys from station to station and collects as many children as possible at a central point. The instruction is confined to reading, writing, and arithmetic. Every teacher is required to supplement his oral instruction by a system of instruction of home lessons. Unless this portion of his duties were faithfully attended to much of his time and teaching would be wasted.





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